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Manuscript Report 227e

Sesame Diseases

An annotated bibliography from the 1900-1988 literature

June 1989

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IDRC-MR227e

SESAME DISEASES

An annotated bibliography from the 1900-1988 literature

Compiler:

G.S. Saharan, Professor
Department of Plant Pathology
Haryana Agricultural University
Hisar 125 004, India

Organized by the

Oilcrops Network for East Africa and South Asia
International Development Research Centre

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FOREWORD

The Network

The Oilcrops Network for East Africa and South Asia has been started in 1981 with a base in Ethiopia and a support from the International Development Research Centre of Canada (IDRC). The main objective was to link together IDRC-supported projects and national research programs in the region of Eastern/Southern Africa and South Asia.

During the second phase (1984-87), started and efforts shifted from the establishment to the servicing of the Network. Contacts among scientists were established through visiting and monitoring research activities, publishing the Oilcrops Newsletter, holding International annual Oilcrops Network workshops, supporting scientists to participate in International Conferences, holding training courses for junior scientists, helping in short- and long-term degree trainings, and trying to ease the bottle-necks of germplasm exchange.

In 1987, the third phase started and the need for more focus on specific crops was realized. Within the Network, four subnetworks were established: 1) Brassica, 2) Sesame, 3) Sunflower and 4) Other Oilcrops. Chairmen and co-chairmen of these subnetworks formed the steering committee of the whole Network.

Since the inception of the Network, sesame research received more attention due to the fact that it is the subsistence crop for most farmers in the region. Sesame research support was included in projects in Egypt, Sudan, Ethiopia and India. In addition to being one of the oilcrops discussed in the first workshop (Egypt, 1983), there was a special emphasis on sesame in the second workshop (India, 1985) and the fourth workshop (Kenya, 1988).

The Bibliography

Negotiations started between the Network Advisor, the IDRC Senior Program Officer and the compiler of this bibliography since 1985. However, after the establishment of the Sesame Sub-network in January 1988, this bibliography became the first activity of the Sub-network. Other publications , I am sure, will follow.

Dr. Saharan finished the first effort in 1986 and sent the bibliography to the Network where it was commented on by Dr. Hugh Doggett, Dr. Kenneth Riley and myself. Negotiations for publication took place and the compiler found it a good chance to add more references up to 1988.

A final draft of the bibliography was prepared, double-spaced, by the compiler. The Network Advisor's responsibility was to arrange for retyping and proof-reading in the present final form. The bibliography was not scientifically edited. However, it presents a wealth of information on sesame diseases which has not been compiled before. I am sure that sesame workers around the world will receive this bibliography with enthusiasm and appreciation.

A word of thanks to Martha Kebede, Asegedech Habte, Emawayesh G/Christos, Meskerem H/Mariam and Seid Ahmed who helped me prepare this final form in the shortest possible time.

Abbas Omran
Technical Advisor
Oilcrops Network

PREFACE

Sesame, Sesamum indicum L., synonymous with S.orientale L., is a member of the order Tubiflorae, family Pedaliaceae, which comprises sixteen genera and some sixty species, of which several can be crossed with S.indicum and a few also cultivated for their seeds. The Ethiopian area is generally accepted as the origin of cultivated sesame, S.indicum, with considerable argument in favour of the Afghan-Persian region or even a polytopic origin. Sesame, also known as benniseed, gingelly, sim sim and til, is probably the most ancient oilseed known and used by man, and its domestication is lost in the mists of antiquity. Although originating in Africa, it spread early through West Asia to India, China and Japan which themselves became secondary distribution centres. It is a major oilseed in Burma and S.E. Asia generally, although tending to be ousted by groundnuts as a cash crop. The Portuguese introduced sesamum to Brazil where it is known as gengelim, a name so directly comparable with the Indian name gingelly as to suggest it was from their Indian colonies. Slaves are considered to have introduced sesamum to North America towards the end of the seventeenth century, and in the Southern states it is still referred to as "benne", almost identical to its West African name of "benniseed". Substantial collections of sesame species, types and varieties are now held in the Americas, India, the USSR and to a lesser extent in Japan, which provide valuable gene pools for breeders. Principal sesame producing countries are India, China, Turkey, Burma and Pakistan in Asia; Egypt and Sudan in Africa; Greece in Europe; Venezuela, Argentina, and Colombia in South America; Nicaragua and El Salvador in Central America; and Mexico and the U.S. in North America.

This bibliography has been prepared to provide up-to date information in Sesame (Sesamum indicum L.) diseases. The primary function of this bibliography is to make the sesame diseases literature available to agricultural scientists throughout the world, especially in countries where such reference material is difficult to obtain. It is to provide the literature concerned with sesame diseases which will be helpful to the workers in planning and execution of research programme for management of diseases under field condition.

It contains 680 citations dating from 1903 through 1988, including all traceable references from abstract of papers presented in conferences and symposia and papers appeared in popular journals. The annotations included here are the author's original abstracts or summaries with some editing for consistency of style and economy of space. The citations are arranged numerically in alphabetical order according to the senior author's last name. For more than one paper of some author/authors', the titles are arranged chronologically without consideration of name of Co-authors. The search of literature ended with the December 1988 issues of biological abstracts, Indian phytopathology, Phytopathology, Plant disease and Review of Plant Pathology. The index is divided into ten sections viz., fungal diseases, seed borne diseases, phyllosphere fungi, rhizosphere fungi, bacterial diseases, viral diseases, mycoplasma diseases, nematode diseases, miscellaneous and Books/Bulletins. The fact that only 680 abstracts could be collected in a period of more than 80 years clearly indicates the less attention paid to the diseases of this crop.

In a publication of this nature, omissions and some inaccuracies are inevitable. I shall appreciate having such omissions brought to my attention for inclusion in the supplement.

(G.S. SAHARAN)

ACKNOWLEDGEMENT

I am grateful to Drs. R.P.S. Tyagi and Mahendra Singh Ex. and present Director Research; R.S. Paroda, Ex. Additional Director Research; D.P. Thakur and B.L. Jalali, Ex. and present Professor and Head, Plant Pathology, Haryana Agricultural University, Hisar, for providing facilities to complete this work.

I am indebted to Miss Rajni Arora, Graduate student at HAU for assistance in compiling the most of the references.

I wish to thank Dr. T.P.Yadava and Dr. V.Ranga Rao Ex. and present Project Director, Directorate of Oilseeds Research, Rajenderanagar, Hyderabad; Dr. B.L. Jalali, Professor of Plant Pathology, HAU, Hisar; Dr. Kenneth W.Riley Programme Officer, Crops and Animal Production Systems Agriculture, Food and Nutrition Sciences, International Development Research Centre, New Delhi; Dr. Abbas O.Omran, Technical Adviser, IDRC Oil Crops Network Project, Institute of Agricultural Research, Holetta Research Station, Addis Ababa, Ethiopia and Dr. Hugh Doggett, Consultant, IDRC, 38a Cottenham road, Histon, Cambs, CB4 4ES UK, for their encouragement and giving suggestions for the improvement of this publication.

Finally, I am deeply grateful to the Oilcrops Network/IDRC for making the bibliography available to the sesame Scientists in time.

(G.S. SAHARAN)

BIBLIOGRAPHIC INDEX

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Application of Dithane M-45, 0.2% combined with ndosulfan or Fenthion 0.5 kg a.i/ha was effective in ontrolling powdery mildew, Alternaria blight, aphids nd gallfly during kharif season. In the rabi season hen the incidence of powdery mildew was heavy, iltox 0.25% combined with either Endosulfan or Fenthion at 0.5 kg a.i./ha was best followed by Dithane -45, 0.2% combined with Carbaryl 1 kg a.i./ha or ndosulfan or fenthion 0.5 kg a.i./ha.

002. ANONYMOUS. 1970. Twenty years of Agriculture Research in Rajasthan. Plant Pathology, Department of Agriculture, Rajasthan. 57-62 pp.

* The research carried out in the Department of Plant Pathology on sesamum blight (Phytophthora parasitica var. sesami) and leaf spot (Sphaeronema sesami) has been included in this report.

003. ANONYMOUS. 1971. Recommendations for crops in Sinalda State for the Summer-Winter period, 1971. Centro De Investigationes Agricolas De Sinalda, Mexico. No. 37:158 pp.

* Common and scientific names of sesame diseases are listed alongwith other crop diseases.

004. ANONYMOUS. 1970-1988. Annual Progress Report on sesamum for the years 1970 to 1988. AICORPO, ICAR, Directorate of Oilseeds Research, Rajendranagar, Hyderabad, India.

* The research carried out under All India Co-ordinated Research Project on Oilseeds at different centres of India has been included. It contains data on the occurrence, severity, epidemiology, sources of resistance and control of important diseases of sesamum.

005. ASTHANA, K.S. and B. NARAIN. 1977. Evaluation of sesame varieties in Bihar for summer. Indian J.Agric. Sci. 47(12):611-613.

* Sesame vars. C 1036 and TMV 3 gave high yields as summer crops (sowing during Mid-Feb.) where irrigation facilities are available in Bihar. Both these vars. escape pest and disease incidence under field conditions.

006. AWGICHEW KEDANE. 1982. Additional index of plant disease in Ethiopia. Inst. Agric. Res. Addis Ababa. 10 pp.

* List includes sesame diseases.

007. BOHOVIK, I.V. 1936. Diseases of the newly introduced oleiferous crops in Ukraine. Kieff. 114-123.

* The most severe diseases of sesame are a bacterial leaf spot, a bacterial wet rot of the stem, and a bacterial brown spot of the fruit capsules. Kruglik No. 1 alone appeared to be immune, and DSN showed 12.5% infection, all others being highly susceptible. A slight outbreak of a whitish, rounded or irregular leaf spot with a brown margin upto 1 cm in diameters was observed for the first time in one locality, the causal organism is stated to be Phyllosticta sesami (Bohovik), which has emergent brown, mostly globose pycnidia, 30 to 100 u in diameter and hyaline, continous, elongated pycniospores rounded at both ends and 6 to 13 by 2 to 4 u. The minor diseases of sesame include a wilt associated with a species of Fusarium, and a leaf spot caused by a species of Macrosporium morphologically corresponding to Sawdas description of Macrosporium sesami.

008. CHOHAN, J.S. 1978. Diseases of Oilseed crops, future plans and strategy for control under small holdings. Indian Phytopath. 31(1):1-15.

* Important diseases of sesamum were dealt for control measures along with other oilseed crops.

009. CHUNG, H.W., H.S. CHUNG and B.J. CHUNG. 1966. Studies on pathogenicity of wheat scab fungus (Gibberella zeae) to various crop seedlings. J. Plant Prot., Korea. 3:21-25.

* In inoculation tests, sesamum was resistant to this fungus.

010. DAVIDE, R.G. 1975. A review of diseases affecting upland crops in the Philippines. College of Agriculture, University of the Philippines, Las Banos, Laguna, Philippines. FAO/RAFE/RP 23:186-203.

* An account is presented of occurrence, symptoms and control of main fungal, bacterial and viral diseases of rainfed sesame crop grown in the Philippines.

011. DAVIDYAN, G.G. and T.E. VAKHRUSHEVA. 1981. Pests and diseases of some fibre and oil crops in Pakistan. Byulletan' Vsesoyuznogo Nauchno-Issledovatelskogo Institute Rastenievodstva

imeni. N.I. Vavilov. No. 115:66-72.
* A list of sesame pathogens alongwith others is given.

012. GOLATO, C. 1967. Diseases of cultivated plants in Somalia. Institute Agronomico per Oltremare:147.
* Morphological characters, symptoms, manner of spread and damage caused by fungal and bacterial pathogens on sesamum alongwith other crops are described. The effects of climatic factors and control measures are indicated. There is a host disease and pathogen index.

013. KANG, C.W., B.H. CHOI and J.I. LEE. 1985. Establishment of integrated control systems using several fungicides for major sesame diseases. Sesame & Safflower Newsletter. 1:38.
* The integrated chemical control system including Benoram (1,000x) + Metasyl (1000x) in early June; Metasyl + Oxydong (1,000x) in late June; Benomyl (15,000x) + Oxydong in mid July; Benomyl + Metasyl or Oxydong in early August was most effective for controlling the major sesame diseases with 33% higher yields.

014. MAITI, S. 1984. Major diseases of sesamum and their management. Proc. Seminar, Sesame Cultivation held on 21st August, 1984, ICAR, New Delhi. 37-45pp.
* Major diseases of sesamum has been described.

015. MAITI, S., M.A. RAOOF., K.S. SASTRY and T.P. YADAVA. 1985. A review of sesamum diseases in India. Tropical Pest Manag. 31(4):317-323.
* Important diseases of sesamum have been described with losses caused and control.

016. MAITI, S., M.A. RAOOF., K.S. SASTRY and T.P. YADAVA. 1986. A review of sesamum diseases in India. Sesame & Safflower Newsletter. 1:44-45.
* Current status of sesamum disease in India is reviewed with a list of miner diseases.

017. MALAGUTI, G. 1973. Leaf diseases of sesame. (Sesamum indicum L.) in Venezuela. Rev de la Fac. de Agronomia. 7(2):109-125.
* Symptoms and pathogens of round white spot (Cercospora sesami), angular brown spot (Cylindrosporium sesami), zonate leaf spot (Alternaria sesamicola) and bacterial leaf spot (Xanthomonas sesami and Pseudomonas sesami) are discussed and compared. Their economic importance and the conditions favouring them are discussed.

018. MEHTA, P.R. 1951. Observation on new and known diseases of crop plants of Uttar Pradesh, Plant Prot. Bull. New Delhi. 3:7-12.
* Sesame anthracnose (Colletotrichum sp.) affected 10 to 12 percent of the early sown plants at Kanpur. Other diseases observed on sesamum were powdery mildew (Oidoum spl.), stem rot (Macrophomina phaseoli) and phyllody.

019. MITTER, J.H and R.N. TANDON. 1930. The fungus flora of Allahabad, Part. II. J. Indian Bot. Soc. 9(4):190-198.
* A list (supplementing that published by K.L. Saksena in 1927) is given of 84 fungi collected in the town of Allahabad, the host locality and date of collection being indicated in each case.

020. MONTILLA, D., M. DELGADO and T. ACEVEDO. 1977. "Arawaca" an early variety of sesame. Agronomia Trop. 27(4):483-487.
* Sesame variety "Arawaca" is very short cycled (70-75 days maturity), large not uniformly coloured seeds, few branches and tolerance to common local diseases.

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* Contains information on sesame diseases in India, Asia, East, North and South Africa.

022. PARASHAR, R.D. 1969. Studies on the nature of root exudates, rhizosphere and rhizoplane microflora in relation to the pathogenesis in root-rot of til (Sesamum indicum L.) caused by Macrophomina phaseoli (Maubl) (Ashby). Ph.D. Thesis, Punjab Agricultural University, Hisar. 76 pp.
* The relationship between the nature of root exudates, rhizosphere and rhizosplane and the pathogenesis induced by Macrophomina phaseoli (Maub) (Ashby), the incitant of the root rot of til has been studied.

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* A detailed account of symptoms, sources of resistance and other control measures of important fungal, bacterial and viral diseases of sesamum has been discussed.

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* Important diseases of sesamum in India are discussed along with other oilseed crop diseases.

025. RATHAIAH, Y. 1984. Diseases of sesamum in Assam. Indian Far. V.34(2):30-32, 40.

* Important diseases of sesamum occuring in Assam are described.

026. RHIND, D. 1927. Annual Report of the Mycologist, Burma, for the year ending the 30th June, 1926. Rangoon, Supdt. Govt. Printing and Stationery, Burma. 7.
* The results of seed treatment for the control of root disease of sesamum were fairly promising, the average incidence being reduced from 7.1 percent in the control plots to 4.6 percent in those treated with 0.2 percent Formalin and to 1% in those treated with 0.5% Germisan. The Formalin treatment gave an increase in yield of 26.65%, the corresponding figure for the Germisan treatment being 14.24 percent.

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* Incidence and distribution of 5 pathogenic fungi (Cercospora, Alternaria, Macrophomina, Corynespora, Cylindrosporium) on sesame from different areas.

028. SAHARAN, G.S. 1967. Survey and epidemiology of various plant disease occurring near Jobner, M.Sc. Thesis, University of Udaipur. 117 pp.
* On sesamum powdery mildew (Oidium sp.) and blight (Phytophthora parasitica) are described.

029. SAHARAN, G.S. 1980. Diseases of oilseed crops and their control. Farmer and Parliament. 15(9):13-15.
* The symptoms and control measures of important diseases are described along with others.

030. SAHARAN, G.S. and J.S. CHOHAN. 1972. A survey of diseases of plants in the Kangra district, Himachal Pradesh, Punjab Agric. Univ. J. Research. 9:68-73.
* The severity of leaf spot (Cercospora sesami), blight (Phytophthora parasitica), powdery mildew (Leveillulla taurica) and phyllody was described on sesamum from Hamirpur, Himachal Pradesh, India.

031. SAKSENA, H.K. 1975. Major disease problems of some crops in rainfed agriculture in India. Chandrashenkhar Azad Univ. Agric. & Tech. Kanpur, India. FAO/RAFE/RP-23:146-163.
* The major fungal, bacterial, and viral diseases occuring in rainfed grown sesame are briefly reviewed.

032. SATOUR, M.M. 1984. Major diseases of certain oil crops in Egypt. In oil crops proceedings of a workshop held in Cairo, Egypt, 3-8th September, 1983. Edited K.W. Riley, IDRC, Ottawa, Canada:15-19.
* Sesamum is liable to attack by root, stem-rot and wilt diseases. The most prevalent causal organisms are: Rhizoctonia solani, Sclerotium bataticola (Macrophomina phaseoli), Fusarium oxysporium and Phytophthora parasitica.

033. SCARAMUZZI, G. 1965. Phyto-pathological problems of industrial crops in Sicily with special reference to tamato. Tech. Agric., Catania. 17(3):1-26.
* The principal diseases of sesame are indicated with control measures along with diseases of other crops.

034. SHIVANTHAN, P. 1975. Diseases of rainfed crops in Sri Lanka. Agricultural Research Station, Maha-illuppallama, Sri Lanka, FAO/-RAFE/RP-23:204-206.
* Economic importance and control possibilities of the main fungal and viral diseases occuring in rainfed sesame crop grown in Sri Lanka are listed. Epidemiological data are discussed to a limited extent and a future programme aiming at improved disease control is briefly indicated.

035. SINGH, V.K. 1966. Studies on stem and root-rot of sesamum. M.Sc. (Ag.) thesis, J.N. Agricultural University, Jabalpur, India.
* Laboratory and field studies on stem and root rot of sesame are included.

036. TAYSUM, D.H. 1980. Crop production and protection, Mozambique. Annual Report for Phytopathology, 1979, 23 pp.
* Information on sesame diseases is given along with other crop diseases.

037. TONTVAPORN, S., S. TITATARAN, P. KOVITHEVAVONGS, P. SANGAWONGSE and D. CHOOPANYA. 1975. Major diseases of rainfed crops in Thailand. Division of Plant Pathology, Department of Agric., Bangkok, Thailand. FAO/RAFE-/RP-23:207-228.
* Major diseases in Thailand on sesame are reviewed

with causative agent, symptoms, epidemiology and control measures.

038. TU, L. 1985. Major problems of sesame growing and breeding objectives in Henan Province, China. Sesame & Safflower Newsletter. 1:28-29.
* In all 10 fungal, 3 bacterial and one viral disease of sesame in Henan are listed. Black stalk (Macrophomina phaseoli) is stated to be most prevalent and severe diseases in this region.

039. VENKATARAO, A. and N. SHANMUGAM. 1983. Diseases of sesamum and their control. Pesticides. 17(11):34-35.
* Ten major diseases of sesamum are described and control measures discussed.

040. VERMA, M.L. 1985. Sesame pathological problems and research progress in India. In oil crops: Sesame and Safflower. Proceedings of the second oil crops Network Workshop held in Hyderabad, India 5-7 Feb., 1985, I.C.A.R., New Delhi and I.D.R.C., Canada, 1985 (Edited by Abbas Omran). 44-47.
* About 32 pathogens occur in India that cause major or minor diseases such as damping off, collar rot, root rot, wilt, leaf spots, powdery mildew, leaf curl and phyllody. Information on occurrence, distribution, losses, symptoms, etiology, epidemiology and management of diseases with references is given.

041. VYAS, S.C. 1981. Diseases of sesamum and niger in India and their control (sesame and Guizotia abyssinica). Pesticides. 15(9):10-15.
* Symptoms and control measures of sesamum and niger diseases were described.

042. VYAS, S.C. 1981. Some high-yielding disease-resistant sesamum varieties. Indian Fmg. 30-(12):11.
* Several varieties are listed with their degree of resistance against stem and root rot, wilt, bacterial blight, leaf spot and fungal blights.

043. VYAS, S.C. and R.K. VERMA. 1978. Watch out for these sesamum diseases. Intensive Agric. 16(6):25-26.
* Symptoms and control measures of important diseases were described.

044. ZAMBRANO, C. and O.TORTOLERO. 1985. Reaction of sesame cultivars to soil-borne pathogens. Sesame & Safflower Newsletter. 1:37.
* Sesamum seedling rot and soil pathogenes isolated were Phytophthora hibernali, Macrophomina phaseoli, Pythium oligandrum, Fusarium, Rhizoctonia, Sclerotium and Trichoderma. Reaction of numerous varieties from different countries to these pathogens over three years field testing was tabulated.

045. ZAMBRANO, C., L. ZAMBITO., C. DIAZPOLANCO and A. CARRASCO. 1980. Study and control of sesame (Sesamum indicum) diseases. Second seminar School, Agro. Univ., Centro Occidental Lisandro Alvarado, Escueia de Agronomia, Barquisimento (Venezuela), 15-16 pp.

046. ZAKAULLAH, O. and S. PERVEEN. 1979. Diseases of sesame. Pakistan J. Forest. 29(1):35-46.
* The diseases are reviewed and their incidence on 3 vars. is reported. Cercospora leaf spot was common on all vars. Peshawar local var. was moderately susceptible to phyllody whereas the vars. Calinda and Punjab 37 were not infected.

B. FUNGAL DISEASES

Alternaria

047. ABSELME, C. 1975. Diseases transmitted by seeds. Seed Sci. Tech. 3(3/4):649-654.
* Alternaria sesami is transmitted through sesame seeds.

048. BARBOZA, MAZZANI and G. MALAGUTI. 1966. Effects of leaf spots caused by Cercospora sesami (Zimm) and Alternaria spp. on the yields of 10 sesame varieties. Sixth agronomic conference, Maracaibo. Reports Vol. 3:17-21.
* All the vars. were affected, yield being reduced by 15.7-55.2%. Incidence 94 days after the appearance of symptoms was a more reliable guide to the effect on yield than incidence 42 days later.

049. BERRY, S.Z. 1960. Comparison of cultural variants of Alternaria sesami. Phytopathology 50(4):298-304.
* At U.S. Deptt. Agric., Beltsville Md., A. sesami caused damping off of Kansas sesame seedlings sprayed with a culture suspension in the green house, dark brown to black water-soaked lesions developed followed by shrinkage of tissue on stems and leaves. There was no evidence of pathogenic specialization. Cultural differences separated the isolates into 5 group with optimum growth temperatures ranging from 20° to 30°C. The spores of all isolates were similar and borne singly or occasionally in group of 2 or 3.

050. CHAUHAN, R.K.S. and B.M. KULSHRESTHA. 1984. Production of Phytoalexin in Sesamum indicum

against Alternaria sesami. Indian Phytopath. 37(3):482-485.

* The diffusate obtained from the fruit cavities of sesamum inoculated with a spore suspension of Alternaria sesami was inhibitory to the germination of spores. It inhibited the spore germination of Aspergillus niger, Cladosporium cladosporioides, Colletotrichum capsici, Curvularia lunata, Fusarium solani, Helminthosporium tetramera, Mycosphaerella rabiei, and Rhizopus stolonifer. No inhibition was caused by the extracts of healthy uninoculated fruits.

051. CULP, T.W. and C.A. THOMAS. 1964. Alternaria and Corynespora blights of sesame in Mississipi. Plant Dis. Reptr. 48(8):608-609.

* In 1961 and 1963, A. sesami and C. cassiicola seemed to reduce yields. It is doubted whether highly resistant vars. can be bred from moderately resistant ones and better methods are advocated.

052. DESHPANDE, G.D. and D.D. SHINDE. 1976. Occurence of cultural strains of Alternaria sesami (Kawamura, Mohanty and Bahera), in Maharashtra. J. Maharashtra Agri. Univ. 1(2/6):124-125.

* One of the two isolates from diseased sesame plants was highly virulent and the other mildly.

053. DHAMU, K.P., P. POTHIRAJ, R. JEYARAJAN and M. BALAKUMAR. 1981. Estimation of yield loss in sesamum due to diseases. Madras Agric. J. 68(10):648-652.

* In monsoon 1978 the avoidable loss in the yield of sesame was 48% and 29% in summer 1979. In monsoon 1978 and yield was reduced significantly by charcoal rot disease at the rate of 595 kg/ha and Alternaria blight decreased the yield significantly at the rate of 10.73 kg/ha. In summer 1979, phyllody reduced the yield significantly at the rate of 8.4%/ha and charcoal rot disease decreased the yield at the rate of 10.88 kg/ha.

054. DOLLE, U.V. 1982. Studies on leaf blight of sesame (Sesamum indicum L.) caused by Alternaria sesami (Kawamura Mohanty and Behera). Univ. Agric. Sci., Dharwad, India. Thesis Abstracts. 8(4):396-397.

* Although none of the 22 varieties screened in the field was resistant, none of the 22 varieties screened in the field was resistant, x7732/10-2, wild Dhanduka, 32, D7-11, E8 and 1978 K5222 were moderately resistant.

055. DOLLE, U.V. 1984. Studies on leaf blight of sesame (Sesamum indicum L.) caused by Alternaria sesami (Kawamura, Mohanty and Behera). Mysore J. Agric. Sci. 18(1):89-90.

* Detailed study on epidemiology and control of sesame Alternaria blight was conducted.

056. DOLLE, U.V. and R.K. HEGDE. 1984. Incidence of Alternaria leaf blight of sesame in Karnataka. Plant Path. Newsletter. 2(1):8.

* Incidence of A. sesami ranged from 32.38 to 72.21 per cent.

057. DOLLE, U.V. and R.K. HEGDE. 1984. Epidemiology and control of leaf blight of sesame caused by Alternaria sesami (Kawamura, Mohanty & Behera). Plant Path. Newsletter. 2(1):10.

* Disease appears after 3 days of germination and reaches peak on 35 days old crop, cv. X-7732/10-2 showed least infection (10.4%). Best control was achieved with mencozeb @ 0.3% applied 30, 45 and 60 days after sowing.

058. ELLIS, M.B. and P. HOLLIDAY. 1970. Alternaria sesami. Common wealth Mycol. Inst. Descr. Pathog. Fungi. Bact. 250:2 pp.

* Alternaria sesami has been characterised.

059. ESENTEPE, M. 1984. Alternaria spot disease on sesame. J. Turkish Phytopath. 13(2/3):1-03-104.

* A. sesami was isolated from diseased plants in Aydm, Turkey. Seed infection was 16.5 to 63.5%.

060. GUPTA, P.P., S.K. GUPTA., C.D. KAUSHIK and G.S. SAHARAN. 1985. Biochemical changes in leaf surface extract and total chlorophyll content of sesame (Sesamum indicum L.) in relation to Alternaria leaf spot disease (A. sesame). Sesame & Safflower Newsletter. 1:40.

* Wax, phenols and chlorophyll was higher in tolerant cvs. (RT-4-6, HT-24) whereas reducing sugars and total soluble nitrogen was more in susceptible cvs. (Pb. Til No. 1, HT-1).

061. GUPTRA, S.K., P.P. GUPTA., C.D. KAUSHIK. and G.S. SAHARAN. 1987. Biochemical changes in leaf surface extract and total chlorophyll content of sesame in relation to Alternaria leaf spot disease (Alternaria sesami). Indian J. Mycol. & Pl. Pathol. 17(2):165-168.

* The leaf surface extract from susceptible (Pb. Til No. 1. HT-1), and resistant (RT-4-6, HT-24) cvs. of sesame were analysed for wax, total phenols reducing sugars, total soluble nitrogen and chlorophyll content.

062. HANSFORD, C.G. 1943. Contributions towards the fungus flora of Uganda. V.Fungi Imperfecti. Proc. Linn. Soc. London. 1:34-67.

* A. sesamicola infects the stems of sesame.

063. JAYARAMAIAH, H., A.L. SIDDARAMAIAH., M.S. JOSHI and A.F. HABIB. 1981. Varietal reactions of sesamum against Alternaria sesami. (Kawamura, Mohanti and Behera). Curr. Res. 10(1):6-7.

* Under field conditions and in glasshouse inoculation trials with Alternaria sesami, the sesame cvs. No. 4, J.T.-7, No.2 and E-8 were highly resistant. They can be used in a breeding programme or if suitable agronomically for direct cultivation.

064. KAWAMURA, E. 1931. New fungi on Sesamum indicum L. Fungi (Nippon Fungological Society). 1:26-29.

* Macrosporium sesami (Kawamura) n.sp., found on sesame leaves in Fukuoka, Japan is characterised.

065. KULSHRESTHA, B.M. and R.K.S. CHAUHAN. 1987. Chromatogram bioassay: a quick method for the detection of phytoalexin in fruits of sesame (Sesamum indicum L.). Nat. Aca. Sci. letters, India. 10(2):49-50.

* Phytoalexin production was demonstrated in sesame fruits in response to inoculation with Alternaria sesami.

066. KULSHRESTHA, B.M. and R.K.S. CHAUHAN. 1988. Physico-chemical nature of the phytoalexin produced by fruits of Sesamum indicum in response to inoculation with Alternaria sesami and its chemical induction. Indian Phytopath. 41(1):92-95.

* Some physico-chemical properties of the phytoalexin produced by fruits of sesamum in response to Alternaria sesami have been studied.

067. KVASHNINA, M.E.S. 1928. Preliminary report of the survey of diseases of medicinal and industrial plants in North Caucasus. Bull. North Cauasian Plant Prot. Stat. 4:30-46.

* Alternaria sp. forms on the upper surface of leaves of sesame rounded or irregular frequently confluent brown spots paling towards the margins and measuring 1.5 to 5 mm. The conidiophores are olive-brown, 1- to 4- septate and 26 to 48 by 4.4 to 5.2 u, the spores vary in shape from flask shaped with very short beak to clavate with a very long beak (5 to 6 times the length of spore itself); they are olive-brown with 1-14 transverse and 1 to 4 longitudinal septa, and measure 28 to 362 (including the beak) by 5.2 to 24 u.

068. LEPPIK, E.E. and G. SOWELL. 1964. Alternaria sesami, a serious seed borne pathogen of world wide distribution. FAO Plant Prot. Bull. 12-(1):13-16.

* A review of the symptoms and morphological characteristics of the disease on sesame and its distribution (throughout Asia, in the Eastern Africa, in Southern U.S.A. and in South America). There is no effective field control and use of disease free seed is advisable.

069. MALAGUTI, G., L.J. SUBERO and N. COMEJ. 1972. Alternaria sesamicola on sesame (S. indicum). Agron. Trop., Venezuela. 22(1):75-80.

* Symptoms of the disease and identification, morphology and culture of the pathogen are described. On inoculation a severe foliage blight and stem canker or necrosis were found in addition to the characteristic of zonate leaf spots. Of 10 cvs. tested, Venezuela 51 was the least susceptible.

070. MC DONALD, D. 1964. Annual Report for the Institute for Agricultural Research, Samaru, for the year 1962-63.

* From the Mokwa Agric. Res. Station, reports stated that further studies on the sesame disease complex have shown that Alternaria sesami, Cercospora sesamicola, Curvularia macularis, Colletotrichum Gloeosporioides (Glomerella cingulata), Helminthosporium halodes, Fusarium semitectum, Macrophomina phaseoli and Pestalotiopsis mayumbensis are closely associated with disease, their individual pathogenicity was established, the first three being the most virulent. None of the sesame strains tested showed complete resistance.

071. MEHTA, P.P. and R.N. PRASAD. 1976. Investigations on Alternaria sesami causing leaf blight of til. Proc. Bihar Acad. Sci. 24(1):-104-109.

* Sesame vars. M3-2, NP6, TMV-2, T-12 and Punjab til No. 1 were susceptible to the pathogen and typical symptoms were found on plants at all stages under highly humid conditions. Conidial morphology and germination studies are described. Oatmeal agar was the best solid and Richard's the best liquid medium at 25°C and fungus grew best in dark. Tillex and cuman effectively inhibited in vitro spore germination even at 0.1%.

072. MELO, G.S. 1970. Alternaria spot of sesame in the state of Pernambuco. Preliminary results of the observations made during 1974-75. Fitopatologia. 11:32.

* Alternaria leaf spot of sesame in the state of Pernambuco is recorded.

073. MENDEZ, R. 1940. Study on a fungus disease of sesame in Costa Rica. Bol. Cent. Nac. Agric. S. Pedro. 5(9-12):426-432.
* Sesame planting in Costa Rica have been attacked by a destructive disease attributed by the writer primarily to infection by A. solani with Helminthosporium sesami as a secondary invader. Excessive atmospheric and soil humidity appears to be the chief contributing factor in severe outbreaks of leaf spot and control should be based in the first place on selection of ecologically appropriate sites, supplemented by such cultural measures as use of healthy seed (treated with a standard fungicides) of resistant early maturing varieties of medium stature, sowing in rows and not at random and the application of Boradeaux mixture at three to four weekly intervals begining when plants reach a height of 20-30 cm.

074. MINZ, G. and Z. SOLEL. 1959. New records of field crops diseases in Israel. Plant Dis. Reptr. 43(9):1051.
* Reported from the Agric. Res. Sta., Rehovot-Beit Dagan, Israel, viz., Alternaria macrospora on sesame along with other diseases of crops.

075. MOHANTY, N.N. and B.C. BEHERA. 1958. Blight of sesame (S. orientale L.) caused by Alternaria sesami (Kawamura) M. Comp. Curr. Sci. 27(12):492-493.
* A survey by the State Agricultural Research Station, Bhubaneshwar, revealed that sesame blight is widespread in India and under moist conditions causes considerable damage. The pathogen closely resembles Macrosporium sesami with the difference that the conidia occur in chains. The fungus has accordingly been reclassified as A. sesami.

076. MOHAPATRA, A., A.K. MOHANTY and N.N. MOHANTY. 1978. Studies on the physiology of the sesamum leaf blight pathogen, Alternaria sesami. Indian Phytopath. 33(3):432-434.
* An account of the effects of different culture media, pH, C and N sources on A. sesami is given.

077. NATARAJAN S and N. SHANMUGAM. 1983. Screening of sesame germplasm for resistance to Alternaria leaf blight. National Seminar on Breeding crop plants for resistance to pests and diseases. Tamil Nadu Agric. Univ. Coimbatore, 25-27th May, 1983 (Abst.).
* Of 963 Sesamum cultures grown under natural infection and examined 60 days after sowing, none was resistant to A. sesami but 12 were moderately so. The 12 showed a susceptible reaction when inoculated.

078. NATARAJAN, S.T. MARIMUTHU and N. SHANMUGAM. 1976. Evaluation of fungicides against Alternaria blight of sesamum Symp., Pl. Prot. Res. Dev. Coimbatore. Abst. 27.
* Spraying either dithane Z-78, 0.2% or dithane M-45, 0.15% was effecacious in controlling the blight.

079. NGABALA, A.Z. and C. ZAMBETTAKIS. 1971. Alternaria sesami (Kaw.) (Mohanty and Behera). Fisches de Phytopathologic Tropicale. 23:6 pp.
* A description of A. sesami on sesame including spread, mode of infection, morphology and control.

080. RAJPUROHIT, T.S. 1981. Morphology and taxonomy of sesamum Alternaria. Madras Agric. J. 68(10):696-697.
* A description on morphology and taxonomy of sesamum Alternaria.

081. RAJPUROHIT, T.S. and N. PARASAD. 1982. Production of pectinolytic enzymes by Alternaria seami in vitro. Indian J. Mycol. Pl. Pathol. 12:220-221.
* Alternaria sesami produced PGTE, PTE and PG enzymes in vitro.

082. RAJPUROHIT, T.S. and N. PRASAD. 1982. Effect of different media, temperatures and levels of pH on the growth and sporulation of Alternaria sesami. Geobios. 9(3):142-144.
* Cultural study on A. sesami is given.

083. RAJPUROHIT, T.S., N. PRASAD and P.D. GEMAWAT. 1983. Effect of carbon and nitrogen on growth and sporulation of Alternaria sesame. Indian J. Mycol. Pl. Pathol. 13(2):234-236.
* Maximum growth (mycelial mat) was observed in case of glucose followed by sucrose, fructose, lactose, and maltose with excellent sporulation except in case of maltose. The fungus is widely adaptable in utilizing various forms of nitrogen for its growth.

084. RAJPUROHIT, T.S., N. PRASAD and P.D. GEMAWAT. 1984. Evaluation of fungicides against Alternaria sesami causing Alternaria blight in vitro, Pesticides. 17(1):57.
* All the fourteen fungicides were effective in controlling the spore germination of A. sesami at

1000 ppm and 500 ppm concentration.

085. RANI, V.U., T.S. LINGAM and V. THIRUPATHAIAH. 1984. Bending of stem in sesame - A new symptom caused by Alternaria alternata. Indian J. Mycol. Pl. Pathol. 14(1):98-99.

* Sesamum plants infected with Alternaria alternata (Fr.) Keissler Wiltshire showed stem bend at infection site after formation of an elliptical lesion with a dark reddish brown halo. Dark brown spots on leaves coalesce to cause blighting. Flowers and fruits also get infection. Infected fruits show hypertrophy.

086. RANI, V.U., C. SATYA PRASAD and V. THIRUPATHAIAH. 1983. Alternaria blight on sesame varieties. Indian Bot. Rep. 2(1):95-96.

* Of 18 sesame cultivars screened under natural infection by A. alternata, TC-325, SP-70-23 and No. 4 were the most resistant.

087. RANI, V.U. and V. THIRUPATHAIAH. 1983. A new blight of sesamum caused by Alternaria alternata. Curr. Sci. 52(28):1149-1150.

* This fungus was found in association with a blight of Sesamum indicum in Warangal and pathogenicity confirmed by inoculation.

088. SAMUEL, G.S. and C.V. GOVINDASWAMY. 1972. Effect of vitamins and levels of pH on the growth and sporulation of Alternaria sesami, the causal agent of leaf blight disease of sesamum (S. indicum). Indian J. Mycol. & Plant Path. 2(2):185-186.

* Vitamins tested did not have significant effect on the growth of A. sesami. Good mycelial growth and sporulation was between 4-8 pH. 5 pH was best for mycelial growth and pH 7 for sporulation.

089. SAMUEL, G.S., C.V. GOVINDASWAMY and P. VIDHYASEKARAN. 1971. Studies on the Alternaria blight disease of Gingelly. Madras Agric. J. 58(12):882-886.

* Results are presented of studies on Alternaria sesami which causes heavy damage to sesame in Tamil Nadu. Bordeaux mixture and dithane Z-78 gave the best control.

090. SIDDARMIAH, A.L., S.A. DESAI and R.P. BHAT. 1979. Laboratory studies with some fungicides against fruit and leaf isolates of Sesamum. Curr. Res. 9(5):86-87.

* The effects of 11 fungicides on the in vitro growth of isolates of Alternaria sesami were reported.

091. SIDDARAMAIAH, A.L., S. KULKARNI, S.A. DESAI and R.K. HEGDE. 1981. Variation in the culture characters of leaf and capsule isolates of Alternaria sesemi (Kawamara, Mohanty and Behera), a causal agent of leaf blight of sesamum. Mysore J. Agric. Sci. 15(1):53-55.

* Pathogenic isolates from sesame leaves differed those from capsules in their growth on different media, but potato dextrose and Tochinai's agars were the best for growth of both the types. Cultural characters suggested the occurence of physiological strains of the fungus.

092. SIDDARAMAIAH, A.L., S.A. DESAI and H. JAYARAMIAH. 1981. Studies on pod spot of sesamum caused by Alternaria sesami (Kawamura, Mohanty and Behera). Agric. Sci. Digest. 1(2):73-75.

* Sesame losses in Karnataka, India, due to the fungus were 0.1-5.7 g/100 fruits. The number of shrivelled seeds depended on disease severity. The fungus greately reduced germination. JT-63-117, A-6-5, JT-66-276, Anand-9, JT-62-10, VT-43 and Anand-74 are resistant cultivars.

093. SIDDARAMAIAH, A.L., S.A. DESAI and R.K. HEGDE. 1981. Effect of sulphur and phosphorus compounds on growth and sporulation of Alternaria sesami and Alternaria lini. Curr. Res. 10:41-42.

* Potassium dihydrogen phosphate supported maximum growth followed by disodium hydrogen phosphate and dipotassium hydrogen orthophosphate. Maximum sporulation was supported by dipotassium hydrogen arthophosphate and disodium hydrogen phosphate.

094. SIDDARAMAIAH, A.L. and R.K. HEGDE. 1984. Occurence of Alternaria alternata (Kissler) on safflower and sesamum. India. J. Oilseeds Re. 1:83:-84.

* Since last three years, authors observed the association of Alternaria alternata (Kissler) causing Alternaria leaf blight of sesamum under field conditions in Karnataka.

095. SINGH, D., S.B. MATHUR and P. NEERGAARD. 1980. Histological studies of Alternaria sesamicola penetration in sesame seed. Seed Sci. & Technol. 8:85-92.

* The dormat mycellium of the fungus usually occured in the sub epidermal layers of the seed coat and occasionally in the endosperm and embryo.

096. SINGH, D., S.B. MATHUR and P. NEERGAARD. 1983. Systemic seed transmission of Alternaria sesamicola in Sesamum indicum. Trans. Br. Mycol. Soc. 80(3):570-571.

* The pathogen was isolated from normal appearing as well as stunted plants indicating that it can invade the whole plant system without sowing symptoms.

Botryosphaeria

097. SHUKLA, B.N. and S.C. VYAS. 1977. Two new diseases of sesamum (Sesamum indicum L.) JNKVV. Res. J. 11(1/2):142-143.
* Leaf blight (Botryosphaeria ribis) of sesamum caused brown or black irregular marginal leaf spots. Brown sunken pod spots, stem and flowers are also affected seeds turn brown.

Cercospora

098. ANONYMOUS. 1941. Plant diseases. Notes contributed by the Biological Branch. Agric. Gaz, N.S.W., Lii 5:274-276.
* Cercospora sesami on sesame was one of the new records along with other crop diseases.

099. CHOUDHARY, S. 1945. Control of Cercospora blight of til. Indian J. Agric. Sci. 15:140-142.
* The sesame blight caused by Cercospora sesami is a serious disease in Assam where it caused an average yield reduction of 5 percent. The pathogen is prepetuated by infected seeds and plant residues in the field. Chemical seed treatments were ineffectual against the disease, but half an hour immersion in water heated to 128°F, as recommended by Nusbaum gave excellent results in large scale field plantings in 1943 and 1944. After one year's storage, the seeds were free from superficial contamination but the fungus still persisted in the interior.

100. CHUPP, C. 1953. A monograph of the fungus genus Cercospora. Ithaca, N.Y. 667 pp.
* Cercospora spp. on sesamum are described along with others.

101. CIFERRI, R. and R. GONZALEZ FRAGOSO. 1926. Hongos parasitosy sapro fitos de la Republica Dominicane (5 serie). Bol. R. Soc. Espanola Hist. Nat. 26(4):248-258.
* Cercospora sesami was reported on leaves of sesamum.

102. CURZI, M. 1932. Of African fungi and diseases. I. Concerning certain parasitic Hyphomycete from Italian Somaliland. Boll. R. Staz. Pat. Veg. N.S. 12(2):149-168.
* Cercospora sesami Zimm Var. somalensis Curzin n.v. on the leaves of Sesamum indicum produced sparse spots 0.5 to 5 mm in diameter. At first that are minute sub-rotund with a whitish centre surrounded by a blackish-purple margin later they become large, angular and distinctly zonate with alternately whitish and blackish-purple circles. The amphigenous, chest nut dimorphous conidiophores arise from prominent stromata in small bundles or singly on the upper surface of leaf they usually arise in tufts and are conspicously thickened at the base and tapering or geniculated at the apex, non-septate or sparsely septate, and measuring 27 to 40 by 3 to 7u. On the under surface they arise singly or in bundles of two or four and are straight, septate and frequently 3 to 4 u in diameter. The straight or flexuous cylindrical, hyaline conidia are 5 to 6-septate and measure 40 to 70 by 3 to 3.5 u.

103. DELPRADO, H.L.V.V. 1961. Overzicht van de verrichtingen van het. Department van Landbouw Veetelt en Vusserij in 1961. Surinaam Landb. 10(6):217-236.
* Cercospora sesami constituted new record on sesamum.

104. PERRER, J.B. 1960. The occurence of angular leaf spot of sesame in Panama. Plant Dis. Reptr. 44(3):221.
* The first record in Panama of angular leaf spot (Cercospora sesamicola) of sesame is reported by the Instituto Nacional de Agriculture. The outbreak (in 1959) was severe causing burning of leaves and considerably reducing yields. Selection of tolerant varieties is advocated to control the disease which was found to be seed-transmitted and was probably introduced from Nicaragua.

105. GONZALEX FRAGOSO, R. and R. CIFERRI. 1928. Honges parasitos Y Caprofitos de la Republica Dominicana (16' series). Bol. R. Soc. Espanola. Hist. Nat. 28(7):377-388.
* Cercospora sesami Zimm was found on living leaves of Sesamum orientale.

106. HANSFORD, C.G. 1931. Annual Report of the Mycologist. Ann. Rept. Deptt. of Agric. Uganda, for the year ended 31 December, 1930 (Part-11):58-65.
* In this report Cercospora sesami on sesame is included along with other crop diseases.

107. HANSFORD, C.G. 1938. Annual Report of the Plant Pathologist, 1936. Rep. Dept. Agric. Uganda, 1936-37 (111):43-49.
* Sesamum is widely affected by two leaf spot diseases, one due to Cercospora sesami appears as small-generally round, papery, white to yellowish

brown spots on both surfaces, while the other due to Cylindrosporium sesami n. sp.

108. IBRAHIM, F.M. and EL-NURELAMIN. 1974. A quantitative morphological classification of thirty species of Cercospora Mycopathologia Mycologia Applicata. 52(2):141-146.
* Twenty morphological characters of the spp. collected in the Sudan, were used for a quantitative numerical classification. The high level of morphological similarity suggests that these species may be non-specific and may cross-infect their respective hosts including C. sesami on sesame.

109. KILPATRICK, R.A. and H.W. JOHNSON. 1956. Sporulation of Cercospora species on Carrot leaf decoction agar. Phytopathology. 46(3):-180-181.
* At the Delta Branch, Mississipi Agricultural Exp. Station, Stoneville, Cercospora sesami produced conidia on carrot leaf decoction agar prepared by Dichun and Valleau's method in a modified form, steaming without pressure. In general, sporulation tended to be more profouse in dishes containing 25 to 40 ml agar than in those with only 10 to 15 ml and in daylight than darkness.

110. KUROZAWA, C., J. NAKAGAWA, T. DOI and E. MELOTTO. 1985. Behaviour of 13 sesame (Sesamum indicum) cultivars to Cercospora sesami, its transmissibility by seed and control. Fitopatologia Brasileira 10(1):123-128.
* Morada indeiscente and Morda were resistant in field trials. Carbendazim and thiophanite methyl eliminated seed infection Viability of the fungus decreased after 4 years of seed storage.

111. KUSHWAHA, U.S. and P.K. KAUSHAL. 1970. Reaction of sesamum varieties to Cercospora leaf spot in Madhya Pradesh. Mysore J. Agric. Sci. 4(2):228-230.
* Of 31 sesame varieties tested in the field, 41, 41A, 41B, 128 and 128B were resistant to Cercsopora sesami and the others moderately resistant or susceptible.

112. LITZENBERGER, S.C. and J.A. STEVENSON. 1957. A preliminary list of Nicaraguan plant diseases. Plant Dis. Reptr 42:19.
* Pathogens are listed under hosts and list includes Cercospora sesami on sesamum.

113. MAZZANI, I.A.B. 1966. Sesame growing. Agronomia S.V.I.A. 3:9-18.
* Brief description of round spot (Cercospora sesami), irregular spot (Alternaria sp.), collar rot (Phytophthora sp.) and Fusarium wilt are given.

114. MOHANTY, N.N. 1958. Cercospora leaf spot of sesame. Indian Phytopath. 11(2):186-187.
* In August, 1957, at the State Agricultural Research Station, Bhubaneshwar, a severe leaf spot of sesame was found to be caused by Cerospora sesamicola (Mohanty) with spores indistinctly 2-7 septate, 20-120 x 2-8u. It differs from Cercospora sesami in the uniformly brown angular spots, short, narrow, closely packed conidiophores and narrow cylindrical conidia.

115. MULLER, A.S. and C. CHUPP. 1945. Las Cercospora de Venesula. Bol. Soc. Venez. Cien. nat. 8(52):35-59.
* Comparised in this annotated list of 176 species of Cerospora hither to recognized in Venezuela are 29 new to science including Cercospora sesami on sesame.

116. MULLER, A.S. and D.A. TEXERA. 1941. The white spot of sesame. Agriculture Venez 47-49, 57-58.
* The white to grey, sharply delimited spots, 1 to 2 mm in diameter produced by Cercospora sesami on sesame foliage and pods in Venezuela number 100 to 400 per leaf. Under humid conditions, such as prevail in states of Aragua, Carabobo, Miranda and Distrito Federal, disease may assume a severe character involving premature defoliation and reducing yield of seed.

117. NARASIMHAN, M.J. 1935. Report of the Mycoilogical section for the year 1933-34. Admin. Rep. Agric. Dept. Mysore, 1933-34:19-22.
* Cercospora sp. on sesame is recorded.

118. NUSBAUM, C.J. 1941. The role of hot water-seed treatment in control of Cercospora blight of Benne. Phytopathology. 31(8):770.
* In 1939 the benne crop in coastal region of South Carolina was severely damaged by blight (C. sesami) which was found to be present to a maximum extent of 16 percent internally in seed samples from the same state, Georgia and Florida.
Virtually complete control of this source of contamination was affected by 30 minutes immersion of seed in water heated to 128°F, while surface borne inoculum eliminated by treatment for the same period at 118°F. Over one year storage freed heavily diseased seed from superficial infection but fungus still persisted in the interior.

119. PARK, M. 1937. Report on the work of the Mycological Division. Adm. Rep. Dir. Agric.,

Ceylon, 1936:D28-D35.
* Cercospora sesami of gingelly and other diseases are reported.

120. RAO, A.V. and K.P. DHAMU. 1983. Varietal resistance studies on Cercospora leaf spot of sesamum in Coimbatore, Tamil Nadu. In Proceedings of the National Seminar on the management of diseases of oilseed crops, Madurai, India, Tamil Nadu Agricultural University:69-70.
* The reactions of 27 sesame lines of Cercospora sp. are tabulated.

121. RATHAIAH, Y. and M.S. PAVGI. 1973. Perpetuation of species of Cercospora and Ramularia parasitic on oil seed crops. Annals of the Phytopathological Society of Japan. 39(2):103-108.
* C. sesamicola on sesame perpetuate through viable sclerotia in crop debris.

122. RATHAIAH, Y. and M.S. PAVGI. 1976. Resistance of species of Cercospora and Ramularia to heat and desiccation. Friesia. 11(2):77-84.
* Although heat resistant, conidia of C. sesamicola are precluded from serving as primary inoculum by their short life. Tolerance of heat by sclerotia and/or stromata indicated the possibility of their oversummering in the field in India in crop debris and later in the soil.

123. RATHAIAH, Y. and M.S. PAVGI. 1978. Development of sclerotia and spermatogonia in Cercospora sesamicola and Ramularia carthami. Sydowia. 30(16):148-153.
* The structure and development of sclerotia, spermogonia and immature perithecia produced by C. sesamicola on sesame and R. carthami on safflower are described. It was suggested that because of similarities to Mycosphaerella both fungi are probably Mycosphaerella spp.

124. SACCARDO, P.A. 1906. Sylloge Fungorum. 18:595.
* Cercospora sesami Zimm on sesamum was characterised.

125. SCHILLER, J.M., A. THIRATHON and S. KAIMEE. 1981. Performance of rainfed grown sesame (Sesamum indicum L.) in Northern Thailand. Thai J. Agric. Sci. 14(4):339-363.
* During 1976 and 1978 blight disease caused by Cercospora sesami was the main factor causing low yields.

126. SINGH, B.P., B.N. SHUKLA, P.K. KAUSHAL and S.R. SHRIVAS. 1980. Reaction of sesame germplasm to Cercospora sesami leaf spot. J.N.K.V.V. Research J. 10(4):372-373.
* Sesame germplasm reaction to C. sesami is tabulated.

127. SIVANESAN. A. 1985. Telemorphs of Cercospora sesami and Cercoseptoria sesami. Trans. Brit. Mycol. Soc. 85(3):397-404.
* Telemorph connections of the new spp. Mycosphaerella sesami (with Cercospora sesami) and M. sesamicola (with Cercoseptoria sesami) are reported. Species of Cercospora and allied genera causing sesame diseases are described and a key provided.

128. TAMAYO, F. 1941. Botanical explorations in the Peninsula of Poraguana' Falcon State., Bol. Soc. Venez. Cien. Nat. 7(47):1-90.
* Among the parasitic fungi collected by the writer in the course of a botanical survey of the Paraguana Peninsula, Venezuela, in 1938-39 was Cercospora sesami on sesame.

129. TURNER, C.J. 1967. Plant Pathology Division. Rep. Res. Brch. Dept. Agric. Sarawak. 83-91.
* Among 100 disease records new for Sarawak, Cercospora sesami on sesame was one of them.

130. UPPAL, B.N., M.K. PATEL and M.N. KAMAT. 1935. The fungi of Bombay. 8:1-56.
* Cercospora sesami Zimm. was recorded on sesamum.

131. VENKATA RAO, A. and K.P. DHAMU. 1983. Varietal resistance studies on Cercospora leaf spot of sesamum in Coimbatore, Tamil Nadu. In Proceedings of the National Seminar on Management of Diseases of Oilseed Crops. Tamil Nadu. Agric. Uni. Madurai, India. 69-70 pp.
* The cultures viz., 1-38, L-45, RSE-1, HT-1, SI-1545, SI-1501, SI-1032, X-79-9, X-79-6, TMV-6, and SI-1683 showed significantly low intensity of the disease caused by Cercospora.

132. VIEGAS, A.P. and C.G. TEIXEIRA. 1945. Some fungi of Minas Gerais. Rodriguesia. 9(19)-:49-56.
* Among the 19 specimens of fungi from Minas Gerais, Brazil, submitted for examination in February, 1945, Cercospora sesami on sesame was identified.

133. WELLES, C.G. 1934. Observations on taxonomic factors used in the genus Cercospora. Science N.S. Lix. 1522:216-218.
* Conidiophores and conidia from lesions of C.

* Conidiophores and conidia from lesions of C. sesami on sesame were measured during dry and rainy seasons respectively. The fruiting structures were found to be 50 to 150% longer when produced during rainy season and it was shown that conidia on leaves exposed to a saturated atmosphere for 3 to 4 days were 30 to 80 percent longer than those from undisturbed field lesions collected at the same time.

134. WOLF, F.A. 1949. Notes on Venezuelan fungi. Lloydia. 12(4):208-219.
* Diseases caused by the species of Cercospora are very prevalent during dry season and wild and cultivated plants. Sesame may be severely attacked by C. sesami, stems, leaves and capsules being affected.

Cercoseptoria

135. SINGH, S.A. 1984. Cercoseptoria sesami (Hansf.) Deighton on sesame in Manipur. FAO Pl. Prot. Bull. 32(3):112.
* A severe form of leaf spotting on sesame plants intercropped with Phaseolus calcarotus at Kukthar was due to Cercoseptoria sesami not previously recorded in India.

Choanephora

137. KAMAL and S. SINGH. 1976. Wet rot of sesame seedlings in India. Sci. & Cult. 42(6):269-270.
* A report of Choanephora cucurbitarum causing severe losses in sesamum seedlings in July, 1974.

Cladosporium

138. MITTER, J.N. and R.N. TANDON. 1930. The fungus flora of Allahabad. J. Indian Bot. Soc. 9:197.
* Cladosporium spp. was recorded on sesamum from Allahabad (U.P.).

Colletotrichum

139. MEHTA, P.R. 1951. Observations on new and known diseases of crop plants of U.P. Plant Prot. Bull. 3(2):7-12.
* Til (sesame) anthracnose (Colletotrichum sp.) affected 10 to 12 percent of early sown plants at Research Farm, Kanpur, where as on the late sown crop disease was negligible. Oval or elliptical, water-soaked lesions on stem or leaf axis are characteristic of this disease. As the spots do not encircle the stem completely longitudinal streaks of dead tissue are formed, sometimes running the whole length of the stem and involving the fruiting branches. Other diseases observed on sesame were powdery mildew (Oidium sp.) and stem rot (Macrophomina phaseoli).

Corticium

140. CHAUDHARY, K.C.B. and A.K. SINGH. 1974. Foot rot disease of sesame (Corticium rolfsii). Sci. & Cult. 40(3):115-116.
* During Kharif sesons of 1972, a severe incidence of foot rot of sesame was observed around Banaras, Hindu University Campus. It was noted that disease incidence was widespread in dense crop stand and after heavy rains when the weather was humid and warm. Under such circumstances mycelium spread over the surrounding soil infecting host plants if present. On basis of morphological and cultural characters the pathogen has been identified as Corticium rolfsii Sacc. As far as authors are aware the present communication, however, constitutes the first record of Corticium folfsii parasitizing sesame.

141. YOKOGI, K. 1927. Studies on the Hypochnus diseases of S. indicum and pathogenicity of its causal organism to rice plants and soybeans. Agric. & Hort. 2:487-500.
* Cultural studies on Hypochnus centrifuges (Corticium centrifugum), casual organism of white-silk disease of Sesamum indicum showed that minimum temperature for growth is below 10°, optimum 28° to 32° and maximum 41°C. Sclerotial formation is scanty in darkness while the mycelium makes profuse growth under similar conditions. The organism is also pathogenic to rice and soybeans.

Corynespora

142. CASTILLO, A., D. MONZON and L. SUBERO. 1981. Us de las pruchas de rangos multples en la comparecion de los porcentajes de infeccion por Corynespora cassiicola en seis variedaches de ajonjoli X Jornadas. Agronomicas. San Cristabal.
* Comparative evaluations of sesame susceptibility to C. cassiicola.

143. ELLIS, M.B. 1957. Some species of Corynespora. Mycological paper No. 40 Common-wealth Mycological Institute, Kew, Survey, England.
* Species of Corynespora are described.

144. ELLIS, M.B. and P. HOLLIDAY. 1971. Corynespora cassiicola. Common wealth Mycol. Inst. Descr. Pathog. Fungi. Bact. 303:2 pp.

* Corynespora cassiicola is characterised.

145. KANG, C.W., B.H. CHOI and J.I. LEE. 1985. Optimum spraying times of Benomyl 50 WP (Methyl-1-1-Butyl carbamoyl-2-benzidazole carbamate) for sesame leaf blight. Sesame & Safflower Newsletter. 1:39.

* Three sprays of benomyl 50% WP @ 1.2 t/ha. of 15,000 x at 10 days intervals was most effective for the control of sesame blight caused by Corynespora cassiicda in Korea with 15% higher yields.

146. MOHANTY, V.N. and N.N. MOHANTY. 1955. Target spot of tomato. Sci. & Cult. 27(6):330-332.

* Corynespora cassiicola was isolated from leaf spots on sesame.

147. PATINO, H.C. 1967. Diseases of oleiaginous annuals in Colombia. Agricultura Crop. 23(8)-:532-539.

* Symptoms are described of Cercospora sesami, Cornespora cassiicola and wilt on sesame, seed and seedling rot.

148. SAKSENA, H.K. and D.V. SINGH. 1975. Corynespora blight of sesame in India. Indian J. Farm. Sci. 3:95-99.

* Premature defoliation and death of blighted sesame plants caused by C. cassiicola is described for the first time in India.

149. SEAMAN, W.L., R.A. SHOEMAKER and E.R. PETERSON. 1965. Pathogenicity of Corynespora cassiicola on soybean. Can. J. Bot. 43(11):1461-1469.

* In glass house tests leaves of sesame became infected with C. cassiicola isolate from soybean.

150. SHUKLA, B.N. and S.C. VYAS. 1977. Two new diseases of sesamum (Sesamum indicum L.). JNKVV. Res. J. 11(1/2):142-143.

* Target spot caused by Corynespora cassiicola produced purple brown specks to large spots on leaves and stem. Leaves curl and defoliate. Circular to elongated sunken spots on pods. Seeds turn dark brown.

151. SHUKLA, P., R.N. YADAV and K. DWIVEDI. 1987. Studies on perpetuation of Corynespora blight of sesame. Indian J. Plant Pathol. 5(1):10-13.

* Sesame blight caused by Corynespora cassiicola perpetuates through seed, soil and diseased plant debris (for ten months).

152. SINGH, S.B., B.S. BIAS., D.R. SINGH and D.V. SINGH. 1969. Effect of fungicides against Corynespora cassiicola (Berk & Curt) Wei. in Vitro. Indian J. Microbiol. 9(1-2):29-30.

* Of the 9 fungicides tested against C. cassiicola from sesame Antracol at 1500 ppm and Cu Sandoz and Cereasan wet at 2000 ppm completely inhibited growth.

153. STONE, W.J. and J.P. JONES. 1960. Corynespora blight of sesame. Phytopathology. 50(4):263-265.

* Defoliation and death of sesame of the Miss. Agric. Exp. Sta., Stoneville in autumn 1958 was shown to be caused by C. cassiicola. Crops inoculation to and from soybean was successful but the conidia of both the isolates were some-what broader on sesame (10.02-10.06u against 8.26-8.93u). The fungus was carried both on and within the seed of both the hosts.

154. SUBERO, L.J. 1975. A new pathogen of sesame (Sesamum indicum) in Venezuela. Corynespora cassiicola (Berk & Curt.) Wei. Nuevo pathogeno del ajonjoli (Sesamum indicum) on Venezuela. Corynespora cassiicola (Berk & Curt) Wei Revista ia faculted due Agronomia Universided Central de Venezuela. 8(4):141-144.

* Severe blight, as causing extensive spots on leaves, capsules and stems at flowering and leading to defoliation was observed in experimental plots in periods with continual rain and high pH. C. cassiicola was consistently located from diseased tissues.

155. WEI, C.T. 1950. Notes on Corynespora. Mycological Paper No. 34, Common wealth, Mycological Institute, Kew, Surrey, England.

* Corynespora on sesame is described.

156. YADAV, P.N., P. SHUKLA and K. DWIVEDI. 1986. Detection of amino acid in Corynespora blight of sesame (Sesamum indicum L.). Indian. J. Mycol. & Pl. Pathol. 16(2):182.

Cylindrosporium

157. ANONYMOUS. 1967. Report of the second session of the Near East Plant Protection Commission, FAO, held at Tripoli, Libya, 6-13, for the year 1967.

* In Saudi Arabia Cylindrosporium sesami on sesame was common besides other diseases on cultivated plants.

158. FARR. M.L. 1961. Mycological notes. II. New texa, synonyms and records. Amer. Midl. Nat. 66(2):355-362.

* From Cambodia a new sp., Didymella minuta Farr. on sesame leaves is described and Cylindrosporium sesami is recorded on the same host, probably for the first time in Asia.

159. HANSFORD, C.G. 1938. Annual report of the Plant Pathologist, 1936. Rep. Deptt. Agric. Uganda, 1936-1937 (III):43-49.
* Cylindrosporium sesami n. sp. with dark reddish brown spots was recorded.

160. HANSFORD, C.G. 1943. Contributions towards the fungus flora of Uganda. V. Fungi Imperfecti. Proc. Linn, Soc. London 155th session (1942-1943). 1:39.
* Cylindrosporium on sesame was reported from Uganda.

161. MALAGUTI, G. and A. CICCARONE. 1966. Importance of brown angular leaf spot of sesame caused by Cylindrosporium sesami in Venezuela. Sixth Annual meeting of the Caribbean Division of the American Phyto-pathological Society, Maracacy, Venezuela. Phytopathology. 57(1):7-10.
* This severe leaf spot of sesamum characterized by brown spots 2-20 mm diameter in the vienal areas, sometimes coalescing into large necrotic areas but only rarely on stems or capsules is a limiting factor during rainy season. Vars. Aceitera, Acarigua and Venezuela 52 were affected in all sesame-growing regions. Infection by C. sesame is sometimes also associated with white round spot (Cercospora sesami) and irregular concentric leaf spot (Cercospora sesami).

162. ORELLANA, R.G. 1961. Leaf spot of sesame caused by Cylindrosporium sesami. Phytopathology. 51(2):89-92.
* This disease is severe in Fla and S. Carol and is a new record for the U.S.A. Seed borne sclerotia apparently initiated the 1958 outbreak at Fla. Exp. Sta., Gaineaville, the disease being disseminated during the growing season by air-borne canidia. Optimum temperature for growth of the fungus was 27±2°C, min. 10°, maximum 33°, it was pathogenic to sesame and soybean but not to tobacco or castor bean (Ricinus communis). About 20 lines of sesame from the world collection were moderately resistant.

163. SCHMUTTERER, H. and J. KRANZ. 1965. On Cylindrosporium sesami causing brown spot disease of sesame. Phytopath. Z. 54(2):193-201.
* C. sesami was shown to be the agent of a disease in Sudan previously described in connection with Xanthomonas sesami and thought to be physiogenic. Symptoms of disease to be called brown leaf spot are compared with those caused by other sesame pathogens. Spots are confined to the leaves, irregular, angular, sharply defined. Often adjacent to veins uniformly dirty brown, some what lighter on undersides, 2-10 mm diameter numerous and sometimes merging. Occurence, distribution and morphology of C. sesami are discussed.

164. SILVA, G.S. and G.S. MELO. 1976. Angular spot of sesame in the state of Mararhao. Fitopatologia 11:31.
* Cylindrosporium sesami causing angular leaf spot of sesame was recorded.

165. VISHNAV, M.U., A.M. PARKHIA, I.U. DHRUJ, J.H. ANDHARIA and G.B. LAKHANI. 1985. A new leaf spot of sesamum. Indian Phytopath. 38(1):189.
* A severe leaf spot disease of sesamum caused by Cylindrosporium sesami Hansford was observed in Savrastra region of Gujrat State during Kharif 1983-84. The disease appears as small irrigular slight yellowish spots at first, later on becoming necrotic dark brown and measured 5 to 15 mm. As the disease advanced, the spots coalesced to form irregular dark brown necrotic lesions resulting in leaf blight symptoms. Bud necrosis appears under humid conditions. Acervuli can be observed on both surfaces of leaves.

Erysiphe

166. KRISHNASWAMI, S., A. VENKATA RAO and R. APPADURAI. 1983. A preliminary study on the inheritance of powdery mildew disease in sesamum. National seminar on breeding crop plants for resistance to pests and diseases. Tamil Nadu Agric. Univ. Coimbatore, India, 25-27 May, 1983 (Abst.).
* Results of investigations involving 164 genotypes indicated that resistance to Erysiphe cichoracearum in sesamum may be controlled by two major complementary genes.

167. NATARAJAN, S., K. SACHIDANANTHAN and S.M. RAO. 1983. Screening of sesame cultures for the resistance to powdery mildew under field conditions. In proceedings of the national seminar on management of diseases of oilseed crops. Madurai, India, Tamil Nadu Agricultural University:71-72.
* The reactions of 57 sesame lines of powdery mildew (Erysiphe cichoracearum) are tabulated. 5 cultures were identified as highly resistant.

168. RAO, A.V. and N. SHANMUGAM. 1983. Efficacy of triadimefon and bilaxazol fungicides in the

control of powdery mildew and Cercospora leaf spot of sesamum. In proceedings of National Seminar on management of diseases of oilseed crops, Madurai, India, Tamil Nadu Agricultural University:76-77.

* All 17 fungicides tested controlled powdery mildew (Erysiphe cichoracearum) by Bayleton (triadimefon) and Baycor (bilaxazol). Triadimefon performed best. Calixin (tridemorph) gave best control of Cercospora sesami. Highest yields, however, were recorded in Dithane M-45 (mancozeb) treated plots.

169. REDDY, D.B. 1971. Outbreaks of pests and diseases and new records. Quarterly Newsletter, Plant Prot. Committee for the South East Asia and Pacific Region, FAO: 14(3/4):5-15.

* The diseases of economic crops reported in Thailand was Erysiphe cichoracearum on sesame.

Fusarium

170. ABD-EL. GHANY, A.K., M. EZZ EL-REFEL., M.R. BEKHIT and T. EL-YAMA. 1970. Studies on root rot wilt disease of sesame. Agric. Res. Rev., Cairo. 48(3):85-99.

* Fusarium oxysporum, Rhizoctonia solani and tiumbataticola (Macrophomina phaseolina) were isolated from diseased plants. Infection tests showed that vars. Introduction 51, Sharkya 57, 62 and 203 and especially Sharkya 79 were least susceptible. High soil moisture levels due to frequent irrigation increased infection. The best yields were obtained with irrigation every two weeks.

171. ANONYMOUS. 1968. Phytopatologia, Santa Catalina. Portoviejo, Pichilingue. (Phytopathology Santa. Catalina, Portoviejo, Pichilingue) infone Inst. Nac. Investnes Agropec., Ecuador. 1967:98-101, 139:76-178.

* The sesame vars. Aceitera introducida and Oro were the least susceptible to Fusarium sp.

172. ARMSTRONG, G.M. 1954. New locations for Fusarium wilt of sesame. Plant Dist. Reptr. 38:57.

* Fusarium wilt of sesamum was recorded.

173. ARMSTRONG, J.K. and G.M. ARMSTRONG. 1950. A Fusarium wilt of sesame in the United States. Phytopathology. 40:785.

* A Fusarium wilt of sesame was found in South Georgia in 1948. Varieties were screened against wilt pathogen for sources of resistance.

174. ARMSTRONG, JOANNE, K. and G.M. ARMSTRONG. 1953. Fusarium wilt on sesame. Plant Dis. Reptr. 37(2):77-78.

* Sesame wilt, caused by a species of Fusarium was observed in 1948 on a plantation in S. Georgia. In inoculation experiments most of the varieties and breeding lines tested proved susceptible with the exception of Singrongna which was highly resistant. The sesame Fusarium could not be differentiated from F. vasinfectum morphologically or culturally but was quite distinct from pathogenicity, failing to cause wilting of any other plant inoculated. Fusarium isolates from 10 other hosts did not attack sesame. It is suggested that the use of the names F. vasinfectum and Fusarium vasinfectum var. sesami for the sesame fungus is misleading and should be discontinued.

175. BALAKUMAR, M.S. and N. SHANMUGAM. 1983. Studies on fusarial wilt of sesamum. (Fasarium oxysporum f. sp. sesami on sesame). In Proceedings of the National Seminar on management of diseases of oilseed crops. Madurai, India, Tamil Nadu Agricultural University:73-76.

* Wilt of sesamum caused by Fusarium oxysporum f. sp. sesami was found to be soil borne and not seedborne. The toxin produced by the pathogen was identified as Fusaric acid.

176. BANIHASHEMI, Z. 1982. Fusarium wilt of sesamum in Iran. Iranian J. Plant Pathology. 17(1/4):32-33.

* The occurence of Fusarium oxysporum f. sp. sesami on sesame plants with symptoms of yellowing and wilt in the Busher area is a new record.

177. BARCENAS, V.C. 1962. Diseases of groundnut and sesame in Tolima State. Bot. Nat. Inst. Fom. Algod (Bogota). 3(11):1-2.

* Wilt (Fusarium and Rhizoctonia spp.), bacterial wilt (pathogen unspecified) and brown leaf spot (Cercospora sp.) of sesame were identified.

178. BHARGAVA, S.N., D.N. SHUKLA., R.S. PANDEY and D.V.S. KHATI. 1981. New seedling rot of pigeon pea and sesame (Fusarium equiseti). Acta Bot. Indica. 9(1):131.

* During survey of diseases of pulses and oil crops, in and around Allahabad, two new seedling rots of sesamum were observed. Pathogenicity tests were performed and seedling of sesame showed brown to black discoloration at the basal portion. Both pre and post emergence damping off was observed. Preemergence rot was as high as up to 40 to 60%. Seedlings killed at early stage were generally necrotic and commonly covered with profuse fungal

growth.

179. BHARGAVA, S.N., D.N. SHUKLA, R.S. PANDEY and D.V.S. KHATI. 1981. Some new root rot and seedling blight diseases of pulses and oil crops caused by Fusarium solani. Acta Bot. Indica. 9(1):127-128.
* During a survey of the diseases of pulses and oil crops in and around Allahabad (India) a seedling blight of sesamum caused by F. solani (Mart.) Sacc. was observed.

180. BHARGAVA, S.N. D.N. SHUKLA and N. SINGH. 1978. Two new foot-rot diseases. Nat. Acad. Sci. letters. 1(4):123.
* Notes are given on the incidence and symptoms of F. solani on sesame.

181. BREMER, H. 1944. On wilt disease in South-West Anatolis. Istanbul Yaz. 18:40.
* The sesame wilt presents close parallel with that of tobacco both as regards symptomatology, time of development and the favouring influence of drought. Moreover, M. phaseoli and F. solani were isolated from most of the specimens of diseased material, presumably in a secondary capacity since inoculation experiments were again unsuccessful.

182. BREMER, H., G. KAREL, K. BIYIKOGLU, N. GOKSEL and F. PETRAK. 1952. Beitrage zuc kenntnis der parasitischen Pilze der Turkei. VII. Rev. Fac. Sci. Univ. Instanbul, Ser. B. 17(4):277-288.

183. BULDEO, A.N. and M.S. RANE. 1978. Fusarium wilt of sesamum. J. Maharashtra Agri. Univ. 3(3):167-170.
* The disease on sesame caused by F. oxysporum f. sp. sesami. commonly occurs in Vidarabha mainly in the early stages of the crop. In later stages it is often associated with Macrophomina phaseoli. In vitro tests with the former fungus, optimum, minimum and maximum temperatures for growth are 26, 10 and 35°C respectively. Suitable media for growth are described.

184. BUTLER, E.J. 1926. The wilt disease of cotton and sesamum in India. Agric. J. India. 22(4):268-273.
* A detailed description is given of artificial inoculation of seedlings of both the hosts with organisms isolated from wilted plants, the results of which together with the morphological and cultural features of the pathogens lead the author to consider that the wilt producing fungi attacking cotton, sesame and pigeon pea (Cajanus indicus) in India are specialized strains of Fusarium vasinfectum, the American cotton wilt organism.

185. CASTELLANI, E. 1950. Wilt of sesame. Olearia 1-2:14.
* In summer of 1947, sesame plants growing at Florence developed wilt and trancheomycosis. The bottom leaves turned yellow, dropped and withered then. The leaves above become affected and top of stem dried up and beat over. A brown discoloration was present in wood and extended from root to the apex. A strain of Fusarium oxysporum present in infected material was demonstrated by inoculation experiments to be specific to sesame and is therefore regarded as a new form F. oxysporum f. sesami. Artificial infection experiments showed that the most severe attacks occured in sterilized soil and that the organism is carried on and in seed from diseased plants and lives in soil in the remains of infected plants. Control consists in the use of clean seed and resistant varieties. In one preliminary tests the var. Venezuela 25 showed marked resistance.

186. CHOI, C.Y. 1964. Effects of culture filtrates of Fusarium oxysporum f. sp. vasinfectum upon the germination of seeds of host plants (Sesame and Cotton) and non hosts (Wheat and Rice). Plant Prot. Suwon. 1:42-46.
* Most of the 10 culture filtrates of Fusarium oxysporum f. sp. vasinfectum tested inhibited or retarded germination. The inhibitory capacity varied considerably. In general sesame seeds were highly susceptible.

187. EL-GHANY, A.K.A., M.B. SEOUD., M.W. AZAB., K.A. EL-ALFY and M.A.A. EL-GAWWAD. 1975. Control of root and wilt diseases of sesame by seed treatment with fungicides. Agric. Res. Rev. 53(2):79-83.
* In field experiments those diseases caused by Fusarium oxysporum, Rhizoctonia solani, Sclerotium bataticola and Phytophthora sp; were best controlled by seed treatment with Alberthane 4954, followed by Arasan (thiram) and Phygon (dichlone).

188. GOYAL, S.N., S.M. JANI and P.K. PATEL. 1980. Screening of sesamum germplasm for resistance to Fusarium wilt (Fusarium vasinfectum var. sesami). Gujarat Agric. Univ. Res. Journ. 5(2):52-53.
* The reactions of 206 local and wild sesame cvs. to infection by Fusarium vasinfectum var. sesami (F. oxysporum) are presented, only 3 were tolerant.

189. HANSFORD, C.G. 1932. Annual Report of the

Mycologist. Ann. Rept. Dept. of Agric. Uganda for the year ended 31st December, 1931:59-60.

* The report included Fusarium wilt of sesamum along with others.

190. HANSFORD, C.G. 1939. Report of the senior Plant Pathologist. Rep. Dept. Agric. Uganda for the year 1937-38 (Part II):20-25.

* During the period under review preliminary cross inoculation studies were carried out in Uganda with cultures of Verticillium dahliae and numerous species of Fusarium associated with wilt diseases of sesamum.

191. JOFFE, A.Z. and J. PALTI. 1964. The occurance of Fusarium species in Israel. A first leaf of Fusaria isolated from field crops. Phytopath. Mediterranea. 3(I):57-58.

* On the nine Fusarium spp. identified in 79 isolates from soil and plant material in association with 18 different hosts, F. oxysporum (23 isolates) and F. solani (27) were most prevalent and affected hosts on many soils. Both the F. solani and F. oxysporum groups were associated with a serious wilt of sesame.

192. KANG, C.W., B.H. CHOI and J.I. LEE. 1985. Effects of oxydong 50% WP (Bis-8-quinolinolate-copper) on sesame Fusarium wilt. Sesame & Safflower Newsletter. 1:38.

* Three sprays of oxydong 50 WP @ 1.2 t/ha. of 1,000 x at 10 days intervals was most effective in the control of Fusarium wilt of sesame in Korea with 12% higher yields.

193. KANG, S.W., D.J. CHO and Y.S. LEE. 1985. Incidence of Fusarium wilt of sesamum (Sesamum indicum) in relation to air temperature. Korean J. Pl. Prot. 24(3):123-127.

* Incidence of wilt caused by F. oxysporum f. sp. vasinfectum in cv. Kwangsan was considerably influenced by sowing date and mean air temp. in the field.

194. LEE, J.I., S.T. LEE., C.W. KANG., S.G. OH., N.S. SEONG and Y.S. HAM. 1986. A new disease resistant and high yielding sesame variety "Ansanggae". Sesame & Safflower Newsletter 2:58.

* Ansanggae was moderately resistant to seedling blight including Fusarium and Rhizoctonia blights and also resistant to Corynespora leaf blight, Phytophthora blight and Fusarium wilt.

195. MALAGUTI, G. 1960. Epiphytotics of Fusarium wilt in sesame. Agron. Trop., Maracay 8(4):-145-150.

* A first report for Venezuela of a sesame wilt caused by Fusarium sp. with symptoms similar to those of such wilts in other plants. Incidence was related to ambient conditions, the disease occurred when the water content of the soil was 17-27% of the dry weight. Nematodes, high air temperatures by day and low by night and high soil temperatures to a depth of 5-10 cm during dry periods increased its incidence.

196. MALAGUTI, G. and B. MAZ[illegible]. 1962. Fusarium oxysporum f. sesami causante de la marchitez del Ajonjoli. Agron. Trop., Maracacy. 11(4):-217-219.

* The fungus has now been identified. Three morphological strains described showed similar pathogenic behaviour.

197. PARK, J.S. 1963. Effects of nitrogen source and rate of the growth of the sesame-wilt fungus Fusarium oxysporum f. sp. Vasinfectum (Atk) Synder et Hansen. J. Plant Prot., Korea. 2:16-21.

* Different sources and rates of N had a marked effect on the growth of Fusarium oxysporum f. sp. vasinfectum and or f. sp. sesami the common cause of cotton and sesame wilt in Korea. Nitrate N (best) and Urea N had the most and Ammonia N (either alone or in combination with other N compounds(the least effect. The latter produced effects similar to those induced by phenoxy compounds on other fungus.

198. PARK, J.S. 1964. Studies on the effects of culture filterates of the causal agent of sesame wilt (F. oxysporum f. sp. vasinfectim) on the germination of sesame seeds and the growth of sesame seedlings. Plant Prot., Suwon 1:3-10.

* The culture filtrates strongly or weakly inhibited germination of sesame seeds and produced necrosis. No varietal differences were found in germination response. The 5 strains of Fusarium oxysporum f. sp. vasinfectum used differed in toxicity, but this was not correlated with pathogenicity. In seedling beds growth of shoots and roots both but shoot growth was slightly promoted by weaker (10%) filtrates.

199. REDDY, M.N. and D.S. RAO. 1981. Survey of pathogens of some of the crop fields of coastal Andhra Pradesh - some new records. Indian J. Mycol. & Plant Path. 11(2):287.

* On sesame Fusarium solani was recorded.

200. RIVERS, G.W., J.A. MARTIN and M.L KINMAN.

1965. Reaction of sesame to Fusarium wilt in South Carolina. Plant Dis. Reptr. 49(5):383-385.

* Some of the 568 strains and vars. grown during 1961-64 on wilt infected soil were resistant to Fusarium oxysporum f. sp. sesami in every year except 1964 when there was a severe epidemic but reactions were inconsistent. Data are tabulated.

201. SEARS, R.D. and S.A. WINGARD. 1951. Fusarium wilt of sesamum at Charlotte Court House, Virginia in 1950. Plant Dis. Reptr. 35:173.

* Fusarium wilt of sesamum was reported from Virginia.

202. SELIM, A.K., M.S. SERRY., M.M. SATOUR and B.A. AL-AHMAR. 1976. Breeding for disease resistance in sesame, Sesamum indicum L. III. Inheritance of resistance to Fusarium oxysporum Schlecht. Egyptian J. Phytopath. 8:19-24.

* In 4 crosses between 3 local and 5 introduced sesame cvs. tolerance of F. oxysporum in mature plants was governed by 1 or 2 dominant pairs of genes while in a 5th cross governed by 3 pairs of genes; tolerance was recessive.

203. SEOUD, M.B., A.A. EL-DIB., A.A. EL-WAKIL., M.A.A. EL-GAWWAD and A.T. THOMA. 1982. Chemical control of root rot and wilt diseases of sesame in Egypt. Agric. Res. Rev. 60(2):-119-126.

* The most destructive diseases on sesame in Egypt are caused by Fusarium oxysporum, Rhizoctonia solani and Sclerotium bataticola (Macrophomina phaseolina). Seed treatment with Vitaxax (carboxin) + Captan @ 4 g/kg seed and soil treatment with Daconil 2787 (chlorothalonil) at 3.75 kg.per Faddan gave the best control and highest yields.

204. SEOUD, M.B., A.K.A. EL-GHANY and B.K. MAHAMOUD. 1975. Studies on the effect of fungicidal soil treatment on the incidence of root and silt diseases of sesame. Agric. Res. Rev. 53(2):85-88.

* These diseases associated with Fusarium oxysporum, Rhizoctonia solani, Sclerotium bataticola and Phytophthora sp. were best controlled by soil treatment with Brassicol 75 during field trials over three seasons.

205. SNELL, K. 1923. Contributions to a knowledge of parastic fungus. Diseases of cultivated plants in Egypt and their control. Angew Bot. 5(3):121-131.

* Sesame plants submitted for inspection were found to be attacked by a wilt disease resembling that of cotton and likewise due to Fusarium vasinfectum.

206. SOLOVERA, A.I. and T. MADUMAROV. 1969. Features of morphological characters of F. oxysporum forms. Mikoli. Fitopatol. 3(4):342-345.

* All the eight forms of F. oxysporum examined showed mostly similar cultural and morphological features on potato and acid potato agar, differing somewhat in the size of the macroconidia. Those causing cotton, sesame and aster wilt formed microconidia only in aerial mycelium. On agar (with the exeption of F. oxysporum f. sp. dahliae developing pionnotes) all forms showed very few macroconidia.

207. TERVP, M. 1934. On the occurence of the wilt disease of sesame in Japan-Trans. Sapporo. Nat. Hist. Soc. 13(3):225-226.

* In 1932 sesame plants at the Hokkaido Imperial University, Sapporo were attacked by a wilt disease characterized by wrinkling, dropping and blackish brown discoloration of the leaves and by the eventual death of plants. The causal organism was readily isolated on a number of standard media. Making the best growth at about 30°C and was inoculated into sesame plants with positive results. It produced branched conidiophores bearing a head of mostly non-septate ovoid to ellipsoid, hyaline micro conidia, 5 to 23.5 by 2.5 to 5.5u and also formed cinnamon buff coloured macro conidia, 3-4 or 5 septate measuring 20.8 to 44.2 by 2.6 to 4.5u, 36.4 to 49.4 by 3 to 5 u and 41.6 to 52 by 4 to 5 u respectively. Apical or intercalary chlamydospores were produced. These characters are considered to agree with those of Fasarium vasinfectum with which fungus is accordingly identified.

208. THANASSOULOPOULOS C.C. 1963. The Fusarium wilt of sesame in Greece. Rep. Minist. Agric., Phytopath., Patras:30-31.

* The disease and the causal fungus, F. oxsporum f. sp. sesami are newly recorded for Greece.

209. VIRK, K.S. and P.D. GEMAWAT. 1981. Efficacy of fungicides against Fusarium oxysporum f. sesami. Pesticides. 15:25-26.

* The in vitro effects of twelve fungicides on Fusarium oxysporum f. sesami are tabulated.

210. VIRK, K.S. and P.D. GEMAWAT. 1982. Physiological studies on Fusarium oxysporum f. sesami causing wilt of sesame. Indian J. Mycol. & Plant Path. II (2):282-285.

* No relationship was observed between the in vitro growth of different isolates of the pathogen and

behaviour on the host.

211. VIRK, K.S. and P.D. GEMAWAT. 1982. Evaluation of varieties of sesamum for resistance to Fusarium wilt. Indian J. Mycol. & Plant Path. 11(2):291.
* Varieties and exotic collections (40) were grown in the field for two years and infection by F. oxysporum f. sp. sesami was noted. Ten varieties were resistant (0-5%) wilt.

212. VIRK, K.S. and P.D. GEMAWAT. 1983. Production of pectinolytic and cellulolytic enzymes by Fusarium oxysporum f. sesami. Indian J. Mycol. Pl. Patho. 13(3):357-359.
* All the three isolates (1, 3 and 5) produced PG, PGTE, PTE and CX in vitro. The enzymatic activity in vivo was variable among the wilted plants differing in disease intensity. Pectinolytic enzyme activity was more in plants with low wilt intensity.

213. WANGIKAR, P.D. and R.V. KOTMELWAR. 1979. Screening of various fungicides against Aspergillus niger (Seedling blight of groundnut) and Fusarium oxysporum f. sesami (Wilt of sesame). Pesticides. 11(2):41-42.
* Results of in vitro tests are presented.

Helminthosporium (Drechslera)

214. MENDENZ. R. 1940. Estudio sobre on dano fungoso del ajonjoli in Costa Rica. Bol. Cent. Nac. Agric. San Pedro (Casta Rica). 5(9/12):-426-432.
* Helminthosporium sesami in sesame was recorded from Costa Rica.

215. MIYAKE, J. 1912. Studies on Chinese fungi. Bot. Mag. Tokyo. 26.64
* Helminthosporium sesami on sesamum was described from China.

216. PARISI, ROSA. 1933. Second contribution to the Mycology of Soluthern Italy. Bull. Orto. Bot R. Univ. Napoli. 10:155-175.
* In Southern Italy, out of 51 new fungi recorded Helminthosporium sesami on Sesamum was one of them.

217. POOLE, D.D. 1956. Aerial stem rot of sesame caused by Helminthosporium sesami in Texas. Plant Dis. Reptr. 40(3):235.
* Helminthosporium sesami caused an aerial stem rot of sesame plants of the newly introduced Venezuelan variety Guacare growing in a breeding nursery near College station, Texas, in 1954. The disease is a new record for this host in United States. The stem lesions range from small flecks to large, sunken dark brown spots 10 by 40 mm sometimes coalescing. Small spots may appear at the base of the capsule. Leaf lesions vary from small (1 mm diameter) to large and elongated (2 to 20 mm) and if extensive cause premature defoliation.

218. REINKING, O.A. 1918. Philippine economic plant diseases. Phillippine J. Sci. 13:165-216.
* Helminthosporium on sesame from Phillippines is recorded along with others.

219. REINKING, O.A. 1919. Diseases of economic plants in southern China. Philippine Agric. 8:109-135.
* Helminthosporium on sesame from China is recorded.

220. SACCARDO, P.A. 1917. Helminthosporium sesamum. Notae Mycol. 23:91.
* Helminthosporium on sesamum was recorded and described.

221. STONE, W.J. 1959. Sesame blight caused by Helminthosporium sesami. Phytopathology. (12):815-817.
* In further studies at College Station, Texas, heavy infection of plants 7-21 days old sprayed with a culture suspension was obtained after 60-72 hours at 100% R.H. and about 30°C. Older plants were more tolerant of infection which was maximum with 7-days old cultures. N alone or with Ca each added to the soil (an infertile sand) at 40 lb/acre caused by greate increase in infection, the level was also high with Ca alone or no fertilizer. K and P alone and the latter with Ca reduced infection. Of 267 sesame lines screened only 14 showed any degree to tolerance of disease under greenhouse conditions.

222. TRIPATHI, S.K., S.C. VYAS, K.V.V. PRASAD and M.N. KHARE. 1984. Leaf spot disease of sesamum. Indian Phytopath. 37:373.
* Leaf spot disease of sesamum caused by Drechslera state of Cochliobolous specifer Nelson was observed at Jabalpur (M.P.) in August-September, 1982. The disease started with a pale yellow area at the tip of leaf lamina which developed into a blackish brown lesion. The lesion developed in the form of V-shaped chlorotic zone towards the petiole, gradually increased in size and gave blighted appearance. The extent of disease incidence was around 10-20 per cent. The disease is favoured by high humidity and temperature. The plants start drying from tip towards the base.

223. WALLACE, G.B. 1933. Report of the Mycologist. Ann. Rept. Dept. Agric. Tanganyika Territory, 1932:76-80.

* The most destructive diseases of sesame were a leaf curl probably causd by a virus and a bacterial disease affecting the stems, branches and leaves. Two leaf fungi attacking this host are an Oospora and a Helminthosporium provisionally referred to H. gigasporum subsp. javanicum.

224. WATANABE, K. 1950. Leaf blotch of sesame. Ann. Phytopath. Soc. Japan. II(2):57-65.

* Leaf blotch of sesame caused by Helminthosporium sesami affects the leaves, petioles, stems and pods of seedling plants. The conidiophores measure 105 to 337.5 (average 1941 u long by 5 to 10 (average 7.11) u wide, with 2 to 9 septa and conidia 27.5 to 267.5 (average 102.9) u by 5 to 17.5 (average 15.03) u with 3 to 20 septa (average 8.77). The fungus grew readily on various media at an optimum temp. of between 27° and 30°C at pH 0.6. In culture conidia measured on an average 100.2 by 10.66 u at 230°C and 88.7 by 10.46 u at 37°C. Pathogenicity to sesame was demonstrated in inoculation experiments. Hot water treatment has proved effective in disinfecting contaminated seed.

Leveillula

225. GRANITI, A. 1958. Phytopathological notes. III. Mildew (Leveillula taurica) (lev.) Arn. on sesame in Sicily. Riv. Agric. Subtrop. 52(7-9):410-418.

* In 1954 sesame was attacked for the first time in Sicily by powdery mildew (L. taurica). Biometrical data and inoculation tests on other common hosts appeared to confirm the existance of specialized strains of the fungus.

226. PARRA, R., E.J., A.M. NASS and H.C. DIAZ POLANCO. 1976. Wooly mould of sesame in Venezuela. 1. Aetiology of the disease. Agron. Trop. 26(5):457-462.

* Leveillula taurica was shown to be the pathogen on sesame. Observations on the morphology of the fungus and conidial germination are reported.

Macrophomina

227. ABDOU, Y.A., S.A. EL-HASSAN., and H.K. ABBAS. 1980. Seed transmission and pycnidial formation in sesame wilt disease caused by Macrophomina phaseoli (Maubl) Ashby. Agric. Res. Rev. 57(2):63-69.

* Macrophomina phaseoli is a destructive pathogen of sesame in Iraq, causing typical wilt with dry root rot associated with discoloration of infected tissues due to sclerotial formation. Seeds of infected plants carry the fungus on and inside the testa as sclerotia and stromatic mycelium. Infected and healthy seeds were indistinguishable. Normal germination occured at first in infected seed but seedling deterioration followed and pycnidia were abundant.

228. ABDOU, Y.A., S.A EL-HASSAN., and H.K. ABBAS. 1980. Effects of exudation from sesame seeds and seedlings on sclerotial germination and mycelium behaviour of Macrophomina phaseoli, the cause of sclerotial wilt in the soil. Agric. Res. Rev. 57(2): 167-174.

* Macrophomina phaseoli sclerotia remained dormant in soil treated only with distilled water in the absence of the host. The presence of germinating sesame seeds and seedlings stimulated normal sclerotial germination and attraction of developing mycelium to host roots. Infection cushions and appressoria were also formed prior to infection. Remnants of PDA in soil stimulated limited sclerotial germination without subsequent development or infection. The results suggest that sclerotial germination and behaviour depended on nutrients.

229. AL-ANI, H.Y., R.M.NATOUR. and D.H. EL-EEHADLI. 1970. Charcoal rot of sesame in Iraq. Phytopath. Mediterranea. 9(1): 50-53.

* Sclerotium bataticola (Macrophomina phaseoli) causes serious infection of sesame at all stages of growth. None of the 22 vars. tested was resistant. Temperatures of 30-35°C favoured fungal growth.

230. AL-BELDAWI, A.S., H.M.SHAIK-REDDY. and M.H. AL-HASHIMI. 1973. Studies on the control of charcoal rot of sesame with benomyl. Phytopath. Mediterranea. 12:83-86.

* In glass house experiments benomyl was absorbed by sesame roots and translocated to the stem, where it prevented Macrophomina phaseoli previously added to the soil, from attacking the plant. Significant control was obtained even at 0.3% benlate/pot. No phytotoxic effects were obtained.

231. ASHBY, S.F. 1927. Macrophomina phaseoli (Maubl) Comb. nov. the pycnidial stage of Rhizoctonia bataticola (Taub) Bult. Trans. Brit. Mycol. Soc. 12(2-3): 141-147.

* As a result of careful morphological and cultural comparison of material, Macrophomina from a dry fruit of sesame from Uganda, is identical with sclerotial fungus, Rhizoctonia bataticola. He agrees with Petark's suggestion that pycnidial

forms devoid of stroma and with long thin-walled elliptical spores that remain hyaline & continous should be included is latter's genus Macrophomina.

232. BARTARIA, A.M. 1984. Effect of fungicides on production of extracellular enzyme by Macrophomina phaseolina. Indian Phytopath. 37:418 (Abst.)

* The fungicides like blitox, Dithane Z-78, Dithane M-45, Cuman and Demosan tested for their effect on the activity of cellulose, polygalacturonase (PG) and pectic methyl galacturonase (PMG) were effective in reducing the enzyme activity in vitro at 500 ppm. Blitox, cuman and domosan act by means of inhibiting/inactivating the productions of extracellular enzymes which play key role in pathogensis.

233. BARTARIA, A.M. 1985. Histopathological studies of sesame plants infected with Macrophomina phaseolina. Indian Phytopath. 38(Abst): 602.

* Histopathological studies of sesame plants revealed that the fungus Macrophomina phaseolina colonized the host surface in the hypocotyl region, penetrated the host by forming infection cushions and then pegs. The fungus employed both mechanical as well as biochemical mode of infection.

234. BHARGAVA, S.N. 1965. Studies on the charcoal rot of potato. Phytopath. Z.53 (1): 35-44.

* Hosts determined by inoculation with Macrophomina phaseoli included sesame along with others. Injury was necessary.

235. COOK, A.A. 1955. Charcoal rot of castor bean in the United States. Plant Dis. Reptr. 39(3):233-235.

Charcoal rot (Sclerotium bataticola) M. phascoli from castor also infected sesame when inoculated with needle injury.

236. DAFTARI, L.N. and O.P.VERMA. 1975. An integrated approach to control the root and stem rot of sesamum caused by Macrophomina phaseoli. Presented in Symposium on Plant disease problems organized by Society of Mycology and Plant Pathology, September 18-20th, Udaipur, India.

* Benlate, Tillex and Vitavax were most effective fungicides in checking the mycelial growth of Macrophomina phaseoli. Vitavax as a seed dresser was most efficacious in controlling the disease in pot experiment. Varieties M-3-1, G-5, ES-89 and TC-66 were tolerant, whereas ES 21 was most susceptible to the disease. Sesamum when sown as mixed crop with Urd (Phaseolus mungo L.), Cow-pea (Vigna sinensis), Moong (Phaseolus aureus), Guar (Cyamopsis tetragonoloba) and Moth (Phaseolus aconitifolius) showed reduction in root and stem rot of sesamum.

237. DUBE, H.C. and H.N. GOUR. 1976. Extra cellular pectic enzymes of Macrophomina phaseolina the incitant of root rot of Sesamum indicum. Proc. Nat. Acad. Sci. India B.41(6): 576-579.

* The In vitro extra cellular pectic enzymes produced by M. phaseolina causing root-rot disease of Sesamum was studied on Richard's solution containing sucrose, Richards solution containing pectin and potato-pectin medium. The fungus produced an endo pectin lyase constitutively when sucrose served as sole-carbon source. On Richards solution containg pectin, endo-pectate and endo-pectin lyases were detectable simultaneously in 7-days old culture filtrate. The 14 days old culture filtrate showed the presence of endo-PMG and endo-pectate lyase enzymes. An endo PG was detectable in 7-days old culture on potato pectin medium.

238. EL-DEEB, A.A., A.A.HILAL., I.A. RADWAN., A.A. ALI. and H.A. MOHAMED. 1985. Varietal reaction and Wilt diseases of sesame. Ann. Agric. Sci. Moshtohor. 23(2):713-721.

* Cvs. Giza-25, Giza-24, Local-78 and Local 96 were susceptible to Macrophomina phaseolina, Rhizoctonia solani, Fusarium oxysporum f. sp. sesami and Verticillium albo-atrum. Benomyl (5 g/kg seed) used as seed dressing combined with or without chlorothaonil or dicloran (5 kg/feddan) as soil treatment was superior to all others in controlling sesame diseases.

239. EL-SHAMMA, W.S. 1976. Reaction of different sesame varieties and seeding dates to charcoal rot (Sclerotium bataticola (Taub.) Iraq. J. Agric. Sci. 11:200-207.

* Natural infection (by M. phaseolina) on local vars. in Iraq was studied in 1968-69. Red sesame had the highest yield and the lowest percentage of infection at all 3, seeding dates. For all vars. there was a significant negative correlation between seed yield and percentage of infection.

240. GEHAWAT, F.D. and O.P.VERMA. 1971. Diseases of sesamum (Sesamum indicum L.) in Rajasthan, a note on the control of charcoal rot. Madras agric. J. 58:321-323.

* Effect of formalin, sesamum cake, groundnut cake, mustard cake and farmyard manure on the incidence of Macrophomina phaseoli infection of sesamum were investigated under artificial conditions in pots. Addition of mustard cake to infested soil was found to be most effective in reducing Macrophomina

phaseoli infection in sesmum plants. It gave 16.6% infection as against 83.3% in control.

241. GEMAWAT, P.D. and O.P.VERMA. 1974. Root and stem rot of Sesamum in Rajasthan. Evaluation of varieties (Macrophomina phaseolina). Indian J. Mycol. & Plant Path. 4(1):76-77.

* Among the 53 varieties and collections grown for three seasons, 5 were completely free from the disease, 8 were tolerant, 19 were moderately tolerant and the rest were susecptible.

242. GONZALEZ, M.C. and M.L. SUBERO. 1984. Influencia de Macrophomina phaseolina (Tassi) Goid en la germinacion de la semilla y desarrollo de las plantulas de ajonjoli (Sesamum incidum L.) UCV, Agronomia, Maracay lera. MeMorias de Trabajos de Grado (Resumenes).

* Sesame seed germination and seedling growing as influenced by M. phaseoli.

243. JAIN, A.C. and S.N. KULKARNI. 1965. Root and stem rot of sesamum. Indian Oilseeds J. 9(3):201-203.

* In Madhya Pradesh (Macrophomina phaseoli) remained viable in the soil during the severe summer heat, grew best in the lab at 25-35°C with maximum, sclerotial production at 35°C and caused more disease at 100% than at 60% soil moisture holding capacity. It is concluded that the disease may be minimised by lowering the soil temperature and ensuring proper drainage. Of 13 sesame vars. tested St-58 and Gwalior-5 were most resistant.

244. KHAN, A.L., G.A. FAKIR and M.J.THIRUMALACHAR. 1977. Comparative Pathogenicity of two strains of Macrophomina phaseolina from sesame. Bangladesh J. Bot. 5(1/2):77-81.

* In seedling pot-tests sesame was the most susceptible to the test hosts to the two strains. The pycnidial structure was more pathogenic than the sclerotial one.

245. KULKARNI, N.B. and B.C.PATIL. 1966. Taxonomy and discussion on the nomenclature of Macrophomina phaseoli (Maubl) (Ashby) and its isolates from India. Mycopath. Mycol. appl. 28(3):257-264.

* Relevant literature is reviewed and it is concluded that an isolate studied from sesame should be classified under ssp. sesamica.

246. KULKARNI, N.B. and B.C.PATIL. 1968. Studies on the pycnidial formation of Macrophomina phaseoli (Maubl). (Ashby). Size of pycnidia, ostiole and pycnidiospore and its significance. Mycopath. Mycol. Appl. 36(3-4):311-321.

* Pycnidia were obtained by inoculating sesame isolates on their respective host and on Leonian's medium. Significant differences in the characters measured were found among the isolates and were dependent upon the substrate upon which pycnidia were produced. Delimitation of vars. of M. phaseoli on the basis of measurements made on the alternative hosts is therefore considered invalid.

247. KULKARNI, N.B., B.C.PATIL. and L. AHMED. 1966. Studies on the pycnidial formation by Macrophomina phaseoli (Maubl, Ashby). Development of pycnidia and pycnidiospores. Mycopath. Mycol. appl. 28(4):337-341.

* Development of isolates from sesame and other oil crops is described.

248. LEE, J.I., S.T.LEE., C.W.KANG., S.G. OH., N.S. SEONG. and Y.S. HAM. 1985. A new disease - resistant and high yielding sesame variety Ansanggae. Res. Rep. RDA. Korea. Crops. 27(2):199-202.

* Variety Ansanggae was resistant to seedling blight, root rot and wilt diseases of sesame in Korea.

249. LIKHITE, V.N. 1936. Host range of the Gujrat cotton root rot. Proc. Ass. Econ. Biol. Coimbatore. 3:18-20.

* A field test carried out in Baroda showed the sesame plants as one of the hosts.

250. MAURER, A.R. 1955. Annual Report of the Department of Agriculture of the Northern Region of Nigeria, 1952-53-76.

* A wilt of benniseed (sesame) was tentatively assigned to Macrophomina phaseoli.

251. MAZZANI, B., C. NAVA., A. MARTINEZ. and A. LAYRISSE. 1973. Masporal, a new variety of sesame for the Western Llanos. Agron. Trop. 23(5):495-500.

* Characteristics of the var. especially adapted to conditions in which soil-borne pathogens (Phytophtora, Fusarium, Macrophomina and Rhizoctonia) are prevalent, are described.

252. MAZZANI, B., C.NAVA., A.MARTINEZ, A. LYPRISSE, N. RIVAS. and G.MALAGUTI. 1975. Incorporation of resistance to Phytophthora and Macrophomina in the sesame variety, Aceitera. Agron. Trop. 25(1):11-21.

* A new Aceitera var. resistant to Phytophthora nicotianae var. parasitica, M. phaseoli (M.

phaseolina) and Fusarium oxysporum f. sp. sesami was obtained by backcrossing with the African var. Ajimo Atar 55 resistant to Phytophthora and Macrophomina. The yield and vegetative characteristics of the new var. resemble those of the orginal Aceitera which is resistant to Fusarium.

253. MEKIRI, ALIZA. and Z. SOLEL. 1963. Transmission of charcoal rot by sesame seed. Phytopath. Mediterranea. 2(2):90-92.
* Experiments using the commercial sesame var. Renner 15 demonstrated that Sclerotium bataticola (Macrophomina phaseoli) to which this var. is very susceptible is seed-borne and a high degree of seed infection may account for the field germination.

254. MIRZA, M.S., B. AKHTAR., M. ASLAM. and A. NAAZAR. 1986. Screening for resistance to Macrophomina phaseolina in sesame. Pakistan J. Agric. Res. 7(1):44-46.
* In field tests of 40 cv. grown in artificially infested soil in 1986, KI141 and K161 were highly resistant.

255. MISHRA, R.P., B.P. SINGH, and L.K. JOSHI. 1973. Pod susceptibility of different varieties of til (Sesamum orientale) to Macrophomina phaseoli (Maubl) Ashby. JNKVV Res. J. 7(4):288-289.
* Of 14 vars. tested RT-1 and C50 were rated as resistant and N58-2 semi resistant to pod infection by M. phaseoli (M. phaseolina).

256. MITRA, M. 1931. Report of the Imperial Mycologist. Sci. Repts. Agric. Res. Inst; Pusa, 1929-30: 58-71.
* Strains of Macrophomina phaseoli from sesame were also able to infect potato.

257. MURUGESAN, M., N.SHANMUGAM., P.P.V. MENON., A.ARUKIARAJ., K.P. DHAMU, and M. KOCHUBABU. 1978. Statistical assessment of yield loss of sesamum due to insect-pests and diseases. Madras Agric. J. 65(5):290-295.
* The avoidable loss in sesame yield during the monsoon 1976 and summer 1977 was 110 and 111 kg/ha respectively. The partial regression coefficients of yield on sesame phyllody (Mycoplasma) and charcoal rot (Macrophomina phaseolina) were significant. A 1% increase in the incidence of M. phaseolina reduce yield by 1.8 kg. wereas a similar increase in the incidence of phyllody reduced yield by 8.36 kg.

258. PARASHAR, R.D. and D.SURYANARAYANA. 1972. Polygalacturonase activity of Macrophomina phaseoli the incitant of root rot of Sesamum indicum. Indian Phytopath. 24(3):559-562.
* Polygalacturonase was produced by M. phaseoli (M. phaseolina) in vitro and in vivo.

259. RODRIGUEZ, M. and C.ZAMBRANO. 1985. Studies on relationships between Macrophomina phaseoli (Maubl.) (Ashby) and sesame (Sesamum indicum L.) in Venezuela. Sesame & Safflower Newsletter. 1:36.
* M. phaseoli is an important pathogen in the region. The disease development is affected by plant age, soil humidity and temperature. Benlate and captan were effecient in inhibiting fungal growth. The most resistant cvs. to this pathogen were Maporal, Arawaca and 439.

260. SAREJANNI, J.A. and C.B.CORTZAS. 1935. A note on the parasitism of Macrophomina phaseoli (Maubl.). (Ashby). Ann. Inst. Phytopath. Benaki, Greece, 3:38-44.
* The fungus was in pycnidial stage on sesame. On sesame sclerotia measured 45 to 150 u and are therefore referable to Haigh's group C. The fungus appears to be identical with that reported on sesame from the Philippines by a Petrak as M. philippinensis.

261. SHUKLA, B.N. and B.P. SINGH. 1974. Effect of fungicidal seed treatment on Macrophomina root rot of sesame (Sesamum indicum). Indian J. Mycol. & Plant Path. 3(2): 208-209.
* Seed treatment with Captan (0.3%) gave the best control of M. phaseoli (M. phascolina) and increased yield from 124 to 232 kg/ha.

262. SIRRY, A.R., M.A. AMER., I.S. ELEWA., S.M. ABDALLAH. and M. ABD-EL-GAWAD. 1980. Effect of P and K fertilizers on the growth and the nutrient contents of sesame plant and their relation to root rot incidence. Agric. Res. Rev. 57(2):29-38.
* In glass house studies at a higher P level reduced root rot in plants inoculated with Macrophomina phaseoli (M. phaseolina). Inoculation with M. phaseolina or Rhizoctonia solani reduced Ca concentration in tops.

263. SUNDARARAMAN, S. 1931. Administration Report of the Mycologist for the year 1929-30:30.
* Cross inoculation experiments showed that three distinct strains of Macrophomina phaseoli occur on groundnuts, black gram (P. mungo) and gingelly that of P. mungo being the most virulent and that of groundnut the least so. The sclerotia of the fungus were found to remain viable at room temp. for the period of 54 months. It was shown by pot

culture experiments with sesame that wilting is much more prevalent in infected soil without a layer of sand at the bottom of pot than in similar soil with one.

264. SUNDARARAMAN, S. 1932. Administration Report of the Mycologist for the year 1930-31:20.
* Out of a total of 64,567 gingelly plants in a field on central Farm, 23,642 (36.6 percent) showed infection by wilt (Macrophomina phaseoli), the yield from the diseased plants being only about 43 percent of the normal. Soil infection experiments with the fungus gave positive results on black gram (P. vulgaris) and sunflower, the first two named being most susceptible.

265. SUNDARARAMAN, S. 1933. Administration Report of the Mycologist for the year 1931-32:17.
* On Czapek's agar the optimum growth occured between pH 4.6 and 6.2 for the gingelly strain of Macrophomina phaseoli.

266. TRIBHUWAN SINGH. and DALBIR SINGH. 1982. Transmission of seed-borne inoculum of Macrophomina phaseolina from seed to plant. Proc. Indian Acad. Sci. B.91(4):357-370.
* The presence of pathogen was confirmed in infected but healthy looking sesame seedlings. After 8 weeks almost every surviving plant developed pale yellow to brown circular or oval concentric spots on leaves, stem and capsules. Mycelium and microsclerotia were observed in the peripherial region of lesions. Inter and intracellular mycelium was demonstrated in cortex, xylem and pith cells. Infection in the capsule was recorded on inner wall, septum, placenta and seed spreading from base to apex.

267. URDANETA, U.R. 1981. Pruebas de patogenicidad de Macrophomina phaseoli sobre diferents cultivos bajo condiciones controlades. x Jarnadas Agronomicas, Cristobal.
* Pathogenicity of M. phaseoli from sesame on cotton, peanut, cowpea, corn, sorghum and soybean.

268. URDANETA, U.R. and L.I.D. BAUER. 1981. Charoal rot of sesame caused by Macrophomina phaseoli in different regions of Mexico. Agrociencia. 43:71-79.

269. URDANETA, U.R. and R. ROSIGNE. 1980. Study of various fungi that affect sesame (Sesamum indicum L.) in different regions of Maxico with emphasis on Macrophomina phaseoli. Rama de Fitopatologia. 90:1-111.

270. ZAMBRANO, C., L.ZAMBITO., C. DIAZPOLANCO. and A.CARRASCO. 1980. Contribution to the study of the inter-relation between the fungus Macrophomina phaseoli (Ashby) and sesame (Sesamum indicum L.) Second seminar school Agro. Univ. Centro accidental Lisandro Alvarado, Escuela de Agronomia, Barquisimeto (Venezuela) 53p.

Myrothecium

271. SINGH, D.B. and H.S. SRIVASTAVA. 1967. A new leaf spot disease of Sesamum orientale L. caused by Myrothecium roridium Tode ex Fr. Indian J. Microbiol, 7(1):39-40.
* Newly reported on sesame from India, Symptoms and morphology are described.

Neocosmospora

272. MOREAU, C. and M.MOREAU. 1950. Neocosmospora vasinfecta E.F. Smith. Faux. wilt du Cotonnier. Rev. Mycologie. Suppl. Colon, 15(2):5.
* An account is given of Neocosmospora vasinfecta including its geographical distribution, host range, symptoms on cotton, morphology, biological characters and control. Since the organism can live as a saprophyte in soil, new plantings should not be made for several years in areas where diseased plants have been found, soil disinfection is also advised. Three vars. are known: N. vasinfecta var. tracheiphila on Vigna sinensis, var. nivea on watermelon and var. sesami on sesame.

273. ZAPROMETOFF, N.G. 1925. Diseases of cultivated plants in Middle Asia. Uzbekistan Plant Prot. Sta. Phytopath. Sect., Tashkent, pp. 165.
* In certain years cotton seedlings suffer fairly severely from attacks of a wilt which is attributed to Nectriella (Neocosmospora vasinfecta). A similar disease also occurs on sesamum and is attributed to the same fungus.

274. ZAPROMETOFF, N.G. 1926. Materials for the Mycoflora of Middle Asia. Part I. Pamphlet of the Uzbekistan Plant Prot. Exper. Sta., Phyto-path. Sect. Tashkent, pp.36.
* N. vasinfecta var. sesami Jacz. and F. vasinfectum var. sesami Jacz. on Sesamum (the conidial fungi in both cases being regarded as stages of Neocosmospora) are recorded.

Oidium

275. ANONYMOUS. 1958. Plant Disease Survey for

the twelve months ending 30th June, 1958. Twenty-eighth Annual Report N.S.W. Department of Agriculture, Biological Branch, Division of Science Services: 46.

* Powdery mildew (Oidium sp.) and (Tomato) big bud virus on sesame were reported affecting 10-15% plants.

276. ABRAHAM, E.V., N. SHANMUGAM., S.NATARAJAN. and G.RAMAKRISHNAN. 1976. An integrated programme for controlling pests and diseases of Sesamum. Madras Agric. J. 63(8/10):532-536.

* Under conditions of heavy powdery mildew (Oidium sp.) infection, miltox (0.25%) gave the best control, while light infection of powdery mildew and Alternaria sesami were controlled by dithane M-45 (0.2%).

277. CASTELLANI, E. and A.N.JAMA. 1984. Powdery Mildew of sesame in Somalia. Rivista di Agricoltura Subtropicale e tropicale. 78 (3/4):723-731.

* Symptoms caused by Oidium erysiphoides pathogen of the Main sesame disease are described, with information of the biology of the fungus. Two sprays with tridemefon at the beginning of flowering and fruiting effectively controlled infection.

278. GAIKWAD, S.J., J.E. SABLEY. and A.N. BULDEO. 1971. Reaction of some sesame (S. indicum L.) varieties to powdery mildew disease at Nagpur. J. Maharashtra Agric. Univ. 2(2):170-171.

* Data are presented on the reaction of 59 sesame vars. to Oidium sp. cv. 194-5 was resistant and 88-3 and 77-13 were Moderately resistant.

279. KRISHNASWAMI, S., A. VENKATA RAO. and R. APPADURAI. 1984. Resistance to powdery - Mildew in sesamum. Indian J. Agric. Sci. 54(5) 666-668.

* Out of 28 varieties of sesamum evaluated against powdery mildew (Oidium acanthospermi (Chiddarwar) under artificial inoculation and in the field, Co 1 (TNAU 2) recorded the lowest disease incidence. BS 129, BS 5-18-6 G from Bhubaneshar and X 74-24 from Kirnnagar were the next best.

280. RABINDRAN, R. and R. JAYARAJAN. 1983. Influence of age of gingelly (Sesamum indicum L.) plant on powdery mildew Oidium acanthospermi (Chiddarwar). In proceedings of the National Seminar on Management of Diseases of Oilseed crops, Madurai, India, Tamil Nadu Agricultural University: 64-65.

* Susceptibility of sesame plants decreased with age.

281. ROY, A.K. 1965. Outbreaks and new records. Occurence of powdery mildew caused by Oidium erysiphoides. Plant Prot. Bull FAO 13(2):42.

* Oidium erysiphoides was found on sesame in Assam, the symptoms are described.

282. SAHARAN, G.S., C.D.KAUSHIK. and P.P. GUPTA. 1985. Field evaluation of fungicides for their efficacy in the control of powdery mildew of sesame. Oil crops Newsletter, 2:26-27.

* Three sprays of sulfex (0.2%) starting from the time of appearance of powdery mildew of sesame (Oidium sp.) at 10 days interval reduced its intensity from 36.5 to 6.1% (a decrease of 30.4%) with increase in the yield of more than 26%, karathane (0.2%) was found next best in order of efficacy.

283. SHANMUGAM, N., S.NATARAJAN. and G. RAMAKRISHANAN. 1976. Fungicidal control of powdery mildew of Sesamum indicum L. Madras Agric. J. 63(5/7):420-421.

* Field trail results against Oidium spp, presented at symposium on plant protection at Tamil Nadu Agric. Univ. in Feb. 1976, showed that during the two Kharif seasons sulphur dust gave the highest yields. In 1974-75 rabi season, low disease conditions, benlate was the best followed by wettable sulphur. When mildew was severe, wettable sulphur was the best, followed by milltox and benlate.

284. SNOWDEN, J.D. 1926. Report of the Acting Mycologist for the period November 10th 1925 to September 30th, 1926. Ann. Rept. Uganda Dept. of Agric. for the year ended 31st December, 1926:30-32.

* A mildew (Oidium sp.) on Sesamum in same plot where the Sclerotia and pycnidia of Macrophomina corchon (Macrophomina phaseoli) were found is thought to have made the leaves more susceptible to attack by the latter. A Colletotrichum and more frequently a species of Carcospora were also found on sesame.

285. SUBRAMANIAN, M. and P. CHANDRASEKARAN. 1977. Studies on the phenotypic characters of the inter-specific hybrid (Sesamum indicum L.), (2n=26) and Sesamum laciniatum Klein (2n=32) and its amphidiploid (2n=58). Madras Agric. J. 64(6):389-391.

* The amphidiploid obtained with 0.4% solution of colchicine were highly susceptible to powdery mildew and phyllody diseases.

286. UOZUMI. T. and H. YOSHI. 1952. Some observations on the mildew fungus affecting the cucurbitaceous plants. Ann. Phytopath. Soc. Japan. 16(3-4):123-126.
* Oidium from sesamum was not pathogenic to cucumber.

Phoma

287. MALAGUTI, G. and C.H. DIAZ. 1957. Appearance of a new disease of sesame: black stalk. Agron. Trop., Maracay. 7(3):159-160.
* A disease of sesamum observed since Dec. 1957 in the Estado Protugesa. Venezuela appears as a blackening of a stalks at or just above soil level and induces premature desiccation and scanty fruit production. Phoma sp. was isolated.

288. REDDY, M.N. and D.S. RAO. 1981. Survey of pathogens on some of the crop fields of coastal Andhra Pradesh - some new records. Indian J. Mycol. & Plant Path. 11(2):287.
* The new records includes Phoma sesamina and Fusarium solani on sesame.

289. SACCARDO, P.A. 1914. Phoma sesamina Sacc. on sesamum. Ann. Mycol. 12:306.
* Phoma on sesamum was characterised.

290. SHARMA, K.R. and K.G. MUKERJI. 1973. A sexual complementation affecting pycnidium production in Phoma exigua. Mycologia. 65(3): 709-712.
* Phoma exigua Desm. isolated from the leaves of sesamum was found to exist in two physiologically different forms which, when cultured at 24±2°C, produce pycnidia only if the exchange of some chemical factors occurs between them.

291. SHARMA, K.R. and K.G. MUKERJI. 1976. Effect of carbon sources on the physiology of reproduction in Phoma exigua. Incompatibility Newsletter. 7:48-53.
* Effect of some carbon sources on growth and Pycnidial formation of 2 strains isolated from sesame are discussed.

292. SHREERALI, J.L. 1979. Two new species of Phoma from India. Indian J. Mycol. & Plant Path. 8(2):220-221.
* Phoma variosporease is described from sesame on which it causes ashy-brown marginal lesions surrounded by a dark-brown border and with small Punctiform, dark brown pycnidia on the upper leaf surface.

Phytophthora

293. ANONYMOUS. 1967. List of new diseases in Iran. Iran. J. Plant Path. 4(1):37-40.
* Phytophthora nicotianae on sesame was identified along with other hosts.

294. BARBOZA, C.N., B.MAZZANI. and G.MALAGUTI. 1966. Varietal differences in the susceptibility of sesame to Phytophthora sp. and Phoma sp. Sextas Jornadas Agronomicas Maracaibo, 17-21. Mazo. Memoria. Tomo III.
* From 600 vars. tested 26 were selected for their resistance to both pathogens or resistance to one and low susceptibility to the other.

295. BATES, G.R. 1961. Branch of Botany, Plant Pathology and Seed Testing. Rep. Minist. Agric. Rhod. Nyasald: 50-57.

296. CHO, E.K., N.Y. HEO., S.H. CHOI. and S.C. LEE. 1981. Studies on sesame disease in Korea. I. Incidences of phytophthora blight. Korean J. Pl. Prot. 21:211-215.
* Phytophthora blight on sesame was recorded.

297. CHO, E.K., N.Y. HEO., S.H.CHOI. and S.C. LEE. 1982. Studies on sesame diseases in Korea 1. Incidence of Phytophthora blight. Korean J. Plant Prot. 21(4):211-215.
* In a survey of southern sesame production areas during Aug. 1981, the incidence of blight caused by P. nicotianae var. parasitica ranged from nil to 61%. Diseased plants showed dark discoloration of the stem leading to plant death.

298. CHOI, S.H., Y.A. CHAE. and E.J.LEE. 1986. A screening method for resistance of sesame to Phytophthora blight. Sesame & Saflower Newsletter 2:8-10.
* Germplasm screening technique at seedling as well as at adult plant stage was described.

299. CHOI, S.H., E.K. CHO. and W.T. CHO. 1984. Epidemiology of sesami Phytophthora blight in different cultivation types. Res. Reports - Office of Rural Development, Korea Republic. 26(2):64-68.
* Cultivation in 0.2M wide ridges in plot mulched with black vinyl reduced the spread of the disease (P. nicotianae var. parasitica) by at least 30% and increased yield by 22% compared with mulching alone.

300. CHOI, S.H., E.K. CHOI., N.Y.HEO., W.D. CHO. and S.C. LEE. 1982. Study on resistance and

epidemiology of sesame diseases. Ann. Res. Report. IAS, RDA. 357-372.

* Factors like plant age, inoculum level, and post-inoculation Management were studied using IS-103 and B-67 (MR) and Suweon-9 and Suweon-26 (S) varieties to Phytophthora blight.

301. CIFERRI, R. 1930. Phytopathological survey of Santo Domingo, 1925-29. Journ. Dept. Agric. Porto Rico 14(1):5-44.

* In Villa Vazquez and Santiago, a destructive disease occured in 1928 on sesame; the symptoms of which were very similar to those of tobacco blank shank (Phytophthora nicotianae). It is attributed to an undetermined species of Phytophthora which rapidly developed in a moist chamber on infected material and which was frequently associated with a species of Fusarium.

302. CRANDALL, B.S. and J.DIEGUEZ. 1948. Phytophthora stem canker of sesame in Peru. Phytopathology. 38(9):753-755.

* At the Tingo Maria Experiment Station, Peru, from the National Centre of Agronomy, Salvador. Just before the fruits reached maturity in late Feb. 1947, wilted plants were observed in the lower, poorly drained sections of the plots and closer inspection revealed extensive stem cankers between the collar and tip of the growing point. Girdling infections at the collar led to complete wilting of the plant. Infection apparently originated in the leaves or young lateral branches and spread much more rapidly in a vertical than in a horizontal direction. Dissection of the cankers indicated that the pathogen was primarily an invader of cambium and phloem tissue. Some infection of fruits was also noted. The fungus isolated in pure culture from the advancing margins of cankers was a species of Phytophthora with sporangia measuring 37.4 to 51 by 23.8 to 27.2 (mean 39.7 by 25.5) u produced on branching sporangiphores and oogonia averaging 25.5 u with paragynous antheridia. It is apparently identical with P. cactorum and forms first record.

303. DASTUR, J.F. 1913. Phytophthora parasitica n. sp. a new disease of castor oil plant. Mem Dep. Agric. India, Bot. Ser. 8:177-231.

* Sesame seedlings grown between castor seedlings in Pusa, Bihar, were attacked by Phytophthora parasitica, which was also parasitic on young castor plants.

304. EL-SHEHEDI, A.A., M.M. SATOUR., Y.A. ABDOU. and M.M. HASSAN. 1976. Studies on Phytophthora root and crown rot of sesame. Egyptian J. Phytopath. 8:1-8.

* Details are given of field and glass-house studies on P. nicotianae var. parasitica on sesame and other hosts.

305. FREZZI, M.J. 1950. The species Phytophthora in Argentina. Rev. Invest. Agric., B. Aires. 4(1):47-133.

* Phytophthora parasitica on sesamum was isolated for the first time along with other hosts.

306. GEMAWAT, P.D. 1956. Further studies on Phytophthora blight of sesamum. M.Sc. (Agric.) Thesis, Gujrat University.

307. GEMAWAT, P.D. 1964. Black spots that blight your sesamum Crop. Indian Farming. July.

* The symptoms of Phytophthora blight are described in detail.

308. GEMAWAT, P.D. and N. PRASAD. 1965. Further studies on Phytophthora blight of sesamum. Indian Phytopath. 17(4):273-283.

* Different isolates of P. parasitica var. sesami (P. nicotianae var. parasitica) varied in pathogenicity to sesame. The disease progressed rapidly at 28-30°C and decreased with a rise in temperature. Infection reduced seed viability but the pathogen is not seed-borne. The most effective control was given by 3 sprays of Bordeaux mixture (3:3:30).

309. GEMAWAT, P.D. and N.PRASAD. 1965. Tests with different varieties of Sesamum for resistance to Phytophthora blight of Sesamum. Indian Phytopath. 18(2):128-132.

* Of 41 vars. of sesame tested in glass house against P. parasitica var. sesami (P. nicotianae var. parasitica) only 75A/1-i/2-ii was resistant, 2 others showed some tolerance and the rest were susceptible. All 33 varieties tested in the field were susceptible.

310. GEMAWAT, P.D. and O.P. VERMA. 1971. Diseases of sesamum (Sesamum indicum L.) in Rajasthan, evaluation of varieties of sesamum for resistance to Phytophthora blight. Madras Agric. J. 58:849-850.

* Seventy different varieties and collection of sesamum were tested for resistance to blight (Phytophthora parasitica var. sesami.) under natural and artificial infection conditions. None of the varieties were found to be comparatively resistant to the disease. Sesamum lines No. 2-39, F-8 and 19/1/46-2 were found less susceptible to the disease.

311. GRANDALL, B.S. and J. DIEGUEZ. 1948. Phytophthora on sesamum. Phytopathology. 38:753-755.
* Phytophthora on sesame is described.

312. KALE, G.B. 1954. Studies on blight of sesamum. M.Sc. (Ag.) thesis, Gujarat University.
* Phytophthora blight of sesamum was studied.

313. KALE, G.B. and N. PRASAD 1957. Phytophthora blight of Sesamum. Indian Phytopath. 10(1):38-47.
* A destructive leaf, shoot, and pod disease of sesamum in Gujarat. India, affected 66% of the two equally susceptible cultivated vars. Tal and Tali. The disease kills the plant. The fungus isolated which failed to infect other hosts, was identified as P. parasitica on the basis of its highly specialized prasitism a new name, P. parasitica var. sesamum (Prasad), is assigned to it.

314. KANG, C.W., B.H. CHOI. and J.I.LEE. 1985. Effects of Metasyl 25% WP (Methyl-en-2-methoxy acetyl-en-3-, 6-zylin-ei, 1-alaninate) on sesame phytophthora blight. Sesame & Safflower Newsletter. 1:39.
* Three sprays of Metasyl 25 WP @ 1.2 t/ha. of 1,000 x at 10 days intervals was most effective in the control of Phytophthora blight in Korea with 9% higher yields.

315. KRANTIKUMAR, M.P. BHATNAGAR. and S.M. UPADHYAY. 1963. Occurrence of stem rot on sesame (Sesamum indicum) in Rajasthan. Sci. & Cult. 29(2):99.
* Phytophthora parasitica causes severe losses locally especially in regions with heavy soil and heavy rainfall (30-40"). Pure lines obtained from such areas showed more resistance. Development of more resistant strains from these is planned at the Govt. Bot. Substation, Karkhana Bagh, Kota.

316. MALAGUTI, G. 1953. A stem rot of sesame (S. indicum L.) caused by Phytophthora. Agron. Trop., Maracay. 3(3):201-204.
* For some five year plantings of sesame first in the Aragua valley, Venezuela, and later to a lesser degree in Portugesa and Falcon have suffered from stem necrosis, particularly on heavy, badly drained soils or when heavy rainfall or faulty irrigation caused prolonged waterlogging. The first symptom is a damp, blackish lesion on the collar or below soil level. It spreads rapidly to the stem and branches either girdling the stem and strangling the basal part or extending in irregular vertical streaks. The main root is also affected and the plants are easily removed from the soil leaving the rootlets and rotten cortex behind. The leaves, flowers and branch tips wither and hang downwards. The plant may be attacked at any stage but mostly at the time of flowering. A peculiarity of the disease in Venezuela is that it attacks the tip of the stem and leaves of the newly germinated seedlings causing a type of blight. A Phytophthora sp. belonging to the P. parasitica P. palmivora group was consistently isolated from affected plants.

317. MITRA, M. 1929. Phytophthora parasitica Dest causing "damping off" disease of cotton seedlings and fruit rot of Guava in India. Trans. Brit. Mycol. Soc. 14(3-4):249-254.
* To Sesamum, a high percentage of infection was obtained by inoculating Phytophthora strain from cotton and castor.

318. PRASAD, N., S.P. SEHGAL. and P.D., GEMAWAT. 1970. Phytophthora blight of sesamum. Plant disease problems. Proc. First. Inst. Symp. on Plant Pathology, Indian Phytoph. Soc. IARI, New Delhi. 331-339.
* A detailed account on the occurrence, variation in the pathogen, relation of environment to disease and survival of Phytophthora causing sesamum blight has been given.

319. RATHAIAH, Y. 1985. Phytophthora blight of sesamum new to Assam. J. Res. Assam Agric. Univ., Diphu. 4(1):69-73.
* The newly recorded disease of sesame by P. parasitica var. sesami is most severe in May and June. Plants sown in early August showed considerably disease escape.

320. SEHGAL, S.P. 1963. Studies on the Phytophthora blight of sesamum in Rajasthan, Ph.D. Thesis, Rajasthan University.
* Detailed account of laboratory and field studies is given.

321. SEHGAL, S.P. and N. PRASAD. 1966. Variation in the pathogenicity of single zoospore isolates of sesamum Phytophthora. Indian Phytopath. 19(2): 154-158.
* No morphological or physiological differences were found between isolates of P. parasitica var. sesami (P. nicotianae var. parasitica) which varied in pathogenicity.

322. SEHGAL, S.P. and N. PRASAD. 1966. Studies on the perennation and survival of Sesamum phytophthora. Indian Phytopath. 19:173-177.
* The fungus survives in the soil in the form of

mycelium or chlamydospores as it does not from oospores. The mycelium of the fungus lives in the embryo in dormant condition, therefore seed play some role in the initiation and spread of disease in new localities.

323. SEHGAL, S.P. and N.PRASAD. 1971. Instability of pathogenic characters in the isolates of Sesamum Phytophthora and effect of host passage on the virulence of isolates. Indian Phytopath. 24(2):295-298.

* In investigations at the Agric. Dept. Kota, Rajasthan, the isolates of P. parasitica var. sesamum (P. nicotinae var. parasitica) attacking sesame host loose their virulence when maintained on culture media for long periods but regained it after host passage which when repeated increased virulence above that of the original cultures.

324. SEHGAL, S.P. and N. PRASAD. 1971. Some physiological studies on Phytophthora parasitica var. sesami. Indian Phytopath. 24(2):310-315.

* At the Agric. Dept. Kota, Rajasthan, the effects of temp., pH, C and N sources and vitamins on the fungus (P. nicotianae var. parasitica) from sesame were determined.

325. SEHGAL, S.P. and N.PRASAD. 1972. Note on testing of different varieties, strains and species of Sesamum for resistance to Phytophthora blight. Indian J. Agric. Sci. 42(2):122.

* In screening trails with 370 collections of sesame and also Sesamum indicum, S. radiatum and S. occidentalis. No var. or sp. was immune from P. parasitica var. sesame (P. nicotianae var. parasitica), 14 vars. were resistant at the seedling stage and 17 at the adult stage. These are listed.

326. SINGH, B.P., B.N.SHUKLA. and P.K. KAUSHAL. 1976. Evaluation of Sesamum varieties for their susceptibility to Phytophthora parasitica. Dastur at Jabalpur, Madhya Pradesh. JNKVV Res. J. 10(1):76-77.

* The reaction of 43 sesame cvs. to natural infection by P. nicotianae var. parasitica is tabulated.

Pseudocercosporella

327. PURKAYASTHA, R.P. and F.MALIK. 1976. Two new species of Hyphomycetes from India. Nova Hedwiga. 27(3/4):781-783.

* Descriptions are given of Pseudocercosprella sesami on sesame.

Pythium

328. GEMAWAT, P.D. and N.PRASAD. 1965. Pre-emergence blight of sesamum caused by Pythium aphanidermatum (Eds.) Fitz. Sci. & Cult. 31(6):315-316.

* When soil containing sesame seeds was inoculated with P. aphanidermatum, the seeds failed to germinate, when the soil was inoculated with Phytophthora parasitica f. sp. sesami. (P. nicotianae var. parasitica) the seed germinated but seedlings became blighted within 7 days. When the collar region of plants 2-8 weeks old was inoculated with Pythium aphanidermatum or soil was inoculated, no infection was observed when these procedures were repeated for Phytophthora nicotianae parasitca, symptoms appeared in plants of all ages 3 and 7 days after inoculation.

329. THOMAS, C.A. 1959. Control of pre-emergence damping off and two leaf spot disease of sesame by field treatment. Phytopathology. 49(8):461-463.

* Of the materials tested in the greenhouse and field at Beltsville during 1954-56, Orthocide 75 at 1/4-202/bush gave the best control of pre-emergence damping off of sesame seedlings associated dominantly with isolates of Pythium altimum and at a maximum of 20°C. In a typical field trial the mean percentage stand was increased from 4.8 in the untreated to 34.8. This and other seed treatments also reduced the development of Alternaria leaf spot, severe infection not occuring until after flowering. Bacterial leaf spot (P. sesami) was significantly reduced by seed treatment with streptomycin at 250-1,000 ppm. The trial were run in naturally infested moist soil.

Rhizoctonia

330. AL-HAMDANY, M.A. and M.M. SALIH. 1986. Rhizoctonia damping off in sesame. Indian Phytopath. 39(1):124-126.

* R. solani is the major pathogen causing damping off while Macrophomina phaseolina and Fusarium spp. are minor pathogens.

331. BRITON-JONES, H.R. 1925. Mycological work in Egypt during the period 1920-1922. Min. of Agric. Egypt. Tech. and Sci. Service. Bull. 49:129.

* Cotton isolate of Rhizoctonia could also infect Sesamum.

332. EL-GHANY, A.K.A. and M.E. EL-RAFEI. 1970. Studies on root rot and wilt disease of sesa-

me. Agr. Res. Rev. 48(3):85-99.
* Root rot and wilt diseases of sesame are studied.

333. EL-GHANY, A.K.A., B.K. MAHMOUD, M.B. SEOUD, K.A. EL-ALFY, M.W. AZAB. and M.A.A., EL-GAWWAD. 1974. Tests with different varieties and strains of sesame for resistance to root rot wilt disease. Agr. Res. Rev. 52(2):75-85.
* A total of 87 vars. and strains of sesame were grown for 4 years in soils infected with the fungi Rhizoctonia solani, Sclerotium bataticola and Fusarium oxysporum, the causal agents of root rot and wilt disease. Resistance to the disease of each tested variety or strain differed from one year to another.

334. GHODESWAR, K.S. and R.V. KODMELWAR. 1982. Evaluation of methods of application of fungicides for control of root and stem rot of sesame. The P.K.V.V. Research J. 6(1):81-83.

335. GOKULAPALAN, C. and M.C. NAIR. 1983. Collateral hosts of Rhizoctonia solani (Kuhn) causing sheath blight of rice. Int. Rice. Res. Newsletter. 8(6):10.
* Sesamum was one of the collateral hosts.

336. HANSFORD, C.G. 1940. Report of the Senior Plant Pathologist. Rep. Dep. Agric. Uganda, 1938-39(II):28-29.
* In 1937 the simsim at Kampala suffered rather severe infection by Rhizoctonia bataticola (Macrophomina phaseoli). The fungus was isolated in culture, but inoculation tests gave - ve results. It is concluded that M. phaseoli is at most a very weak parasite of sesame.

337. JAYARAJAN, R., N. SHANMUGAM, M.S. BALAKUMAR. and A. VENKATA RAO. 1982. Effect of seed treatment in controlling Rhizoctonia seedling rot in sesamum. Proc. Nat. Seminar Seed Pathology, TNAU, Coimbatore, Dec. 30-31st, 1982, 50-51 pp.
* Seed treatment with thiran (0.2%) followed by bavistin (0.1%) was found best for controlling Rhizoctonia seedling rots.

338. MISHRA, C.B.P. and N. MUKHERJEE. 1982. Soil amendment with oil-cakes in controlling the root rot of olitorius jute. Jute Development J. 2(4):11-12.
* Soil mixed with 2000 kg/ha of sesamum oil-cake, 3 weeks before sowing and followed by a light irrigation reduced the incidence of root rot caused by Rhizoctonia bataticola. The maximum fibre yield was obtained with N 40, P20, K20 kg/ha + sesamum, followed by NPK + groundnut and NPK + mustard.

339. PEARL, R.T. 1923. Report of the Mycologist to the Government of Central Provinces and Berar. Rept. Dept. Agric., Central Provinces and Berar, for the year ending on 30th June, 1922:19-20.
* A Rhizoctonia root rot of Sesamum was reported alongwith other oilseed crop diseases.

340. REICHERT, I. 1930. Palestine: Root disease caused by Rhizoctonia bataticola. Internat. Bull. Plant. Prot. 4(2):17.
* Rhizoctonia bataticola has so far been isolated from 35 plants in Palestine, the greatest demage being caused to sesame.

341. RHIND, D. 1924. Report of the Mycologist, Burma, for the period ending 30th June, 1924. Rangoon Supdt., Govt. Printing and Stationery, Burma, 6. pp.
* A serious root disease of sesamum caused by Rhizoctonia Solani occured in the Allanmyo district and elsewhere about a tenth of crop being killed by an attack which developed a fortnight before the harvest. Affected plants show all the symptoms of wilt together with a black discoloration of the base of stem which frequently breaks off at ground level. Diseased plants develop no seed.

342. RHIND, D. 1926. Annual Report of the Mycologist, Burma, for the year ended the 30th June, 1925. Rangoon, Supdt, Govt. Printing and Stationary, Burma: 5 pp.
* The root disease of sesame reported in 1924 was again destructive in the East and West Central circles, the losses over the whole area probably averaging 10 percent. Rhizoctonia solani was almost invariably found on the dead plants.

343. SERRY, M.S., A.K. SELIM., M.M. SATOUR. and B.A. AL-AHMAR. 1976. Breeding for disease resistance in sesame, Sesamum indicum L.I. Inheritance of resistance to Rhizoctonia root-rot. Egyptian Journ. Phytopath. 8:9-14.
* Mature plant reaction to R. solani was governed by two pair of genes, the double recessive conferring tolerance in crosses between 3 local and 4 introduced sesame cvs. In another cross the reaction was governed by a single gene pair, susceptibility being recessive.

344. SHAFSHAK, S., B.A. AL-AHMAR, S. SHOOKR. and H.G. EL-MARZOUK. 1985. Genetic behaviour of tolerance for root-rot and wilt disease in sesame (Sesamum indicum L.). Oil crops

Newsletter. 2:66.

* Out of three crosses, N.A. 372-6 x Giza 25 (tolerant x tolerant) N.A. 342-6 x Margo and Giza-25 x Margo (tolerant x susceptible) reaction to Rhizoctonia solani showed complete dominance of tolerance (9T:7S) in first cross and dominance of susceptibility (3T:13S) in the other two crosses. Tolerance to Sclerotium bataticola was partially dominant (13T:3S) in first cross and complete dominance of susceptibility (1T:3S) in other two crosses. Two gene pairs control the difference between the parents in their reaction to R. solani and 1-2 pairs for S. bataticola reaction.

345. SIRRY, A.R., S.H. SALEM, M.A. ZAYED. and D. ANWAR. 1981. Rhizosphere microflora of sesame plants infected with root-rot disease and their activities in antagonizing the main pathogens. Egyptian J. Microbiology. 16(1/2):65-78.

346. SLOFF, W.C., T.H.THUNG. and J. REITSMA. 1947. Leaf diseases of Sereh (Andropogon naruds L.). I. Banded sclerotial disease, caused by Rhizoctonia grisea (Stevens). Mtz. Chron. Natur. ciii(1-2):6-9.

* Positive results were given by inoculation expts. on sesame stalks by Rhizoctonia grisea.

347. SMALL, W. 1927. Further occurrences of Rhizoctonia bataticola. (Taub). Butler. Trop. Agriculturist. 69(4):202-203.

* Since the publication of last list of hosts of Rhizoctonia bataticola, this fungus has been found on a number of further plants in Ceylon, in association with root disease and its known distribution in Ceylon has been extended to include the Jaffna district. The new hosts include sesame on which fungus causes a root disease similar to that which occur in Uganda and Burma.

348. SMALL, W. 1927. Further notes on Rhizoctonia bataticola (Taub). Trop. Agriculturist. 69(1): 9-12.

* The present notes mention several new hosts of R. bataticola recorded since the publication of last list. Diseased specimens of sesamum received by the author from Burma bore numerous typical sclerotia of R. bataticola on their roots & stems and also pycnidia strongly resembling those of M. phaseoli.

349. TAMINI, K.M. and H.A. HADWAN. 1985. Biological effect of Neurospora sitophila and Trichoderma harzianum on the growth of a range of sesamum wilt causing fungi in vitro. Indian Phytopath. 38(2):292-296.

* The differences in the amount of inhibition of growth of a range of sesamum wilt causing fungi by gaseous metabolites from N. sitophila and from T. harzianum could be accounted for by differences in their ages. The highest level of growth inhibition from test fungi ever recorded was as follows: 3-day-old N. sitophila was 55% on virulent R. solani. 51% on a virulent R. solani, 48% on F. oxysporum and 40% on M. phaseoli. Other soil-borne fungi were less effective than N. sitophila.

350. TANEJA, M. and R.K. GROVER. 1982. Efficacy on benzimidazole and related fungicides against Rhizoctonia solani and R. bataticola. Ann. App. Biol. 100(3)425-432.

* Five formulations of 4 benzimidazole derived fungicides, carbendazim, benomyl, thiphanate methyl and methyl 4-(2-(2- dimethyl aminoacetamide) phenyl)-3- thioallophanate were compared for their toxicity towards two pathogenic isolates of R. solani and three of R. bataticola (Macrophomina phaseolina). Two isolates showed the significant differences in mycelial growth inhibition by the 5 fungicides. Benomyl and carbendazim were most inhibitory to all isolates of both fungi, while the sesame isolate of M. paseolina was least sensitive to all fungicides.

351. TRIPATHI, N.N., C.D. KAUSHIK. and T.P. YADAVA. 1977. Control of charcoal rot of sesamum caused by Rhizoctonia bataticola. Pesticides. 11(1-2): 35-37.

* In vitro studies indicated that captafol, benomyl, thiophanate methyl and S-725-8 inhibited the growth of R. bataticola (Macrophomina phaseolina) as did the mercurials. In field tests, Captafol was the most effective followed by carbendazim and thiram + captan.

352. WEI, C.T. 1934. Rhizoctonia sheath blight of Rice. Nanking Coll. Agric. & Forestry Bull. (New Series) 15:21.

* Rhizoctonia sheath blight of rice infected sesame plants also.

353. WICKENS, G.M. 1958. Abyan root rot of cotton. Progr. Rep. Exp. Stas Emp. Cott. Gr. Corp. (Aden):13-15.

* A very similar malady was present in other crops including sesame grown in the Abyan scheme.

Sclerotium

354. AL-HASSAN, K.K., S.A. AL-HASSAN and H.A. RADHY. 1973. Study on Sclerotium bataticola the cause of charcoal rot disease of sesame. Iraq J. Agric. Sci. 8:93-103.

* All 22 vars. tested were susceptible to S. bataticola (Macrophomina phaseoli), American 48, American 71 and Giza 24 showed relatively high tolerance when inoculated in May but little tolerance when inoculated in June.

355. BHARGAVA, S.N. and D.N. SHUKLA. 1980. A new root rot of sesame (Sesamum indicum) Sclerotium rolfsii. Indian J. Mycol. & Plant Path. 9(2):244.
* Symptoms and pathogenicity of Sclerotium rolfsii (Sacc). on Sesamum was described.

356. BULDEO, A.N., V.N. SHUKLA. and B.G. PATIL. 1979. A new sclerotial disease of sesame. Indian Phytopath. 32(1):124-126.
* This is the first report of Sclerotium rolfsii inciting root and stem rot and leaf blight of sesame in India.

357. GEORGOPOULOS, S.G. and C.C. THANASOULOPOULOS. 1960. Research on the control of Sclerotium rolfsii (Sacc). with fungicides. Ann. Inst. Phytopath. Benaki, N.S. 3(2):65-78.
* S. rolfsii was isolated at the Phytopath. Sta. Patras, Greece from young plants. Semesan, cryptonol and tuzet killed sclerotia completely at concentrations above 0.05, 0.02 and 0.1% respectively in vitro, while terraclor 75 W.P. and orthocide 50 did not prevent germination but retarded growth.

358. MCRAE, W. 1930. Report of the Imperial mycologist. Scient Rept. Agric. Res. Inst. Pusa, 1928-29:51-66.
* Sclerotium bataticola readily attacked wounded Sesamum plants, which soon collapsed. The infected plants were blackened and bore numerous pycnidia of Macrophomina phaseoli.

359. MISRA, R.P. and M.N. KHARE. 1970. A sclerotial leaf and stem rot of Nexta. Indian Phytopath. 23(4):706-708.
* Sclerotial leaf and stem rot was observed on Sesamum due to Sclerotium rolfsii.

360. REICHERT. I. and E. HELLINGER, 1947. On the occurrence, morphology and parasitism of Sclerotium bataticola. Pales J. Bot. R. Ser. 6(1-2):107-147.
* A comparative study of the morphology of isolates from bean (Phaseolus valgaris), eggplant, potato, pepper, Cicer arietinum, tomato, pumpkin, cotton, tobacco and sesame showed that the sesame, tobacco and cotton isolates produced coarse, persistent, aerial mycelium with abundant barrel-shaped cells, dense and in sesame-isolate more or less uniformly distributed in concentric zones, but irregularly produced in cotton and tobacco isolates.

361. SELIM, A.K., M.S. SERRY., A.O. OMRAN. and M.M. SATOUR. 1976. Breeding for disease resistance in sesame. Sesamum indicum L. II. Inheritance of resistance to root and stem rot disease caused by Sclerotium bataticola. (Taub). Egyptian J. Phytopath. 8:15-18.
* Mature plant reaction in 4 crosses between six local and introduced sesame cvs. R. bataticola (Macrophomina phaseolina) indicated that susceptibility was dominant over tolerance and was controlled by 1,2 or 3 pairs of genes.

Sphaeronema

362. SEHGAL, S.P. and L.N. DAFTARI. 1966. A new leaf-spot disease of Sesamum. Curr. Sci. 35(16):416.
* This disease of sesame is attributed to a new sp. Sphaeronema sesami. It is characterized by small, necrotic leaf spots which later enlarge and coalesce in severe cases affecting midribs and petioles.

Sphaerotheca

363. GEMAWAT, P.D. and O.P. VERMA. 1972. A new powdery mildew of Sesamum indicum incited by Sphaerotheca fuliginea. Indian J. Mycol. & Plant Path. 2(1):94.
* Symptoms and morphology of Sphaerotheca fuliginea on sesamum are described.

364. LAWRENCE, E. 1951. Report of the Acting Director of Agriculture. Rep. Dep. Agric. Nyasald. 1949:23.
* Among the more important diseases concerned are sesasme mildew (Sphaerotheca fuliginea) and wilt (Fusarium oxysporum).

365. TARR., S.A.J. 1954. Diseases of Economic crops in the Sudan. II. Fibres, Oilseeds, Coffee and Tabacco. F.A.O. Plant Port. Bull. 2:161-165.
* Sesame in the Sudan is commonly attacked by a bacterial blight (blood disease), the symptoms of which resemble those caused by Pseudomonas sesami in India and elsewhere. It can cause severe losses and would probably become very destructive under conditions of intensive cultivation. Powdery mildew (Sphaerotheca fuliginea) occurs on sesame in most areas.

Synchythium

366. BHARGAVA, S.N., D.N. SHUKLA. and N. SINGH. 1979. Some studies on gall diseases of til. Proc. Nat. Acad. Sci. India, B. 49(2):108.

* A nematode (Rhabitoid sp.) was observed associated with resting sporangia of (Synchytrium sesamicola) causing a serious gall disease of sesame. Application of neem cake to the soil checked the disease and the nematodes.

367. GUPTA, S.C. AND S. SINHA. 1951. Further additions to the synchytria of India. Indian Phytopath. 4(1):7-10.

* Five new species of Sychytrium collected near Agra, India from 1948 to 1950 are described. S. sesami on sesame was 172 to 201 (188) u and 10 to 13 u in the form of resting sporangia.

368. LACY, R.C. 1951. Studies on some Indian Synchytria. I. Four new species from Bihar. Indian Phytopath. 3(2):155-161.

* Descriptions are given of 4 new sp. of Synchytrium from near Patna, Bihar, India. In S. sesamicola n. sp. on sesame no prosours was observed. The resting spores are 78 to 128 u in diameter, with a wall upto 6 u thick.

369. SRIVASTAVA, R.C. and A.B. SINHA. 1983. Anatomical studies on Synchytrium galls of Sesamum indicum L. Zentralblatt fur Mikrobiologie. 138(5): 363-366.

370. VARIAR, M. and M.S. PAVGI. 1979. Resistance of germinating zoosporangia of Synchytrium sesamicola to heat and desiccation. Phytopath. Mediterranea. 18:201-202.

* A rise in temperature under dry conditions gradually reduced the percentage germination of sporangia in lab tests. Viability steeply declined at 36°C or higher. The results are discussed in relation to the temperature occuring in the field during periods of growth of sesame.

371. VARIAR, M. and M.S. PAVGI. 1981. In vitro germination of the prosorus and sexuality in four Synchytrium species. Mycopathologia. 73(1):3-8.

* The germination of evanescent prosori from the sporangial galls of S. sesamicola on sesame was observed and studied in sequence. Anomalies in the sporangiogenesis and zoosporogenesis were discussed. Sexuality between the planogametes represented by their pairing and fusion was similar in the 4 spp and is described for S. sesamicola.

272. VARIAR, M. and M.S. PAVGI. 1981. Varietal reaction of sesame to Synchytrium gall disease. (S. sesamicola). Indian Phytopath. 34(4) 430-433.

* None of the varieties tested against Synchytrium sesamicola (Lacy) was found immune or highly resistance. Two were resistant, JT66-276 and SP70-23 and the rest showed infection ranging between resistant and highly susceptible at the seedling and adolescent (young leaf) stages.

Thielavia

373. CHAKARAVARTI, B.P., P.S. SHEKHAWAT and T.B. ANILKUMAR. 1971. Damping off and root rot of sesamum and culuster-beans caused by Thielavia terricola (Gilman and Abbatt). Emmens var. minor (Rayss and Barut) Booth. Mys. J. Agric. Sci. 4:495-496.

* Thielavia terricola var. minor causing damping off and root rot of sesamum was reported.

374. CHAKRAVARTI, B.P., P.S. SHEKHAWAT and T.B. ANILKUMAR. 1973. Control of damping off by Thielavia terricola var minor by soil drenching with fungicides and antibiotics and their defficacy in treatment of seeds. Indian Phytopath. 26(4):646-649.

* Out of 14 fungicides and 2 antibiotics tried, Ziram and Brassicol were effective as seed treatment and soil drench. Cupramar, copper sandoz., Fytolan, Dithane Z-78, Ziram, Aureofungin and Brassicol were effective as soil drench while Actidione was phytotoxic.

Thielaviopsis

375. ADAMS, P.B. 1971. Effect of soil temperature and soil amendments of Thielaviopsis root rot of sesame. Phytopathology. 61(1):93-97.

* Red rot of sesame caused by T. basicola was reduced in glass house experiments by soil amendments with lucerne hay, maize stover and cabbage tissue but in the field the first 2 gave no signigicant control. When sesame followed oats, maize or cabbage no control was obtained. Lucerne hay amendments were ineffective in glass house at 15°C but gave good control at 20°C and 25°C while at 30°C and 35°C the disease was controlled by temperature alone. Rot was less severe in soil kept 10 hr. at 25°C and 14 hr. at 30°C/day than at constant 25°C Chlamydospores germinated best at 25°C in soil but failed to germinate at 35°C. Red rot was controlled 7 weeks after planting by clear plastic much to raise the soil temperature but this was inffective 12 weeks after planting.

376. SUBRAMANIAN, C.V. 1968. Thielaviopsis basicola. Commonwealth Mycol. Inst. Descr. Pathog. Bact. 170:2 pp.
* Thielaviopsis basicola is characterised.

377. TABACHNIK, M., J.E. DEVAY, R.H. GARBER and R.J. WAKEMAN. 1979. Influence of soil inoculum concentrations on host range disease reactions caused by isolates of Thielaviopsis basicola and comparison of soil assay methods. Phytopathology. 69(9):974-976.

378. THOMAS, C.A. and G.C. PAPAVIZAS. 1965. Susceptibility of sesame and castor-bean to Thielaviopsis basicola. Plant Dis. Reptr. 49(3):256.
* A severe red rot of roots and lower stems of the sesame vars. Oro and Margo in experimental plots was caused by T. basicola. Later the disease was observed in the field in Texas. Isolates from sesame were also pathogenic to Ricinus communis vars. Baker 276, Hale and Nebraska 145-4 while Mississippi Wild-1 was highly resistant.

Verticillium

379. CHILTON, J.E. 1957. Sesame (S. indicum L.), a host for Verticillium albo-atrum (Reinke & Berth). Plant Dis. Reptr. 41(9):803.
* Verticillium albo-atrum caused a severe wilt of sesame growing in infected soil at the New Mexico Agricultural Experiment Station. This is apparently the first published record of the disease in the United States. An isolate from sesame infected both sesame and cotton soil-inoculated in the greenhouse and one from cotton was equally pathogenic.

380. ENGELHARD, A.W. 1957. Host index of Verticillium albo-atrum (Reinke & Berth) (including Verticillium dahliae (Kleb). Plant Dis. Reptr. Suppl. 244:23-49.
* Verticillium albo-atrum on sesamum is recorded.

381. ESENTEPE, M., A. KARCILIOGLU and E. SEZGIN. 1972. The first report of verticillium wilt on sesame and okra in Turkey. J. Turkish Phytopath. 1(3):127-129.
* Veticillium dahliae was isolated from sesame.

382. HAWKSWORTH, D.L. and P.W. TALBOYS. 1970. Verticillium albo-atrum. Commonwealth. Mycol Inst. Descr. Pathog. Fungi Bact. 255:2 pp.
* Verticillium albo-atrum is characterised.

383. KAMRAN, R. 1985. Reports on two diseases caused by Verticillium dahliae in Fars Province. Iranian J. Pl. Pathol. 21(1/4) 23:71.
* The pathogen was isolated from stems of wilted sesame.

384. VASILIEFF, A.A. 1933. Wilt of cultivated best-yielding plants under Central Asian conditions. Diseases and Pests of new Cultivated Textile Plants:22-24.
* The results of experiments in 1932 in the neighbourhood of Namangan (Turkestan) to determine the host range of Verticillium dehliae showed that when sown in plots which previously bore severely infected to the extent of 85 to 93.5%.4

C. SEED BORNE DISEASES

385. ABUELGASIM, E.A. and A.B. ZEIDAN. 1985. Induction of pycnidial stage of Macrophomina phaseolina isolated from sesame seeds. Indian Phytopath. 38:523.
* Pycnidia were observed after 4 days on the wheat leaf bits. They appeared as raised, grey to black bodies, erumpt, oval to globular with a distinct ostiole with average dimensions 140 x 135 u.

386. AGARWAL, U. 1965. Seed disorders of Sesamum indicum L., Linum usitatissimum L. and Eruca sativa L., Ph.D. Thesis, Agra University.
* A detailed account of sesame seed disorders.

387. ANONYMOUS. 1980. Annual Report of Kenana Research Station, 1976-77. Abu-Naama, Sudan. Ministry of Agricultural Food and Nutral Resources. 1980:59.
* The work of the Plant Pathology dept. (1-9) includes a survey of seed borne diseases of sesame and field trials of relative susceptibility of sesame cvs. to Xanthomonas campestris pv. sesami.

388. BHARGAVA, S.N., and D.N. SHUKLA. 1979. Inter-relationship studies on some pulses and oil- crop seeds with their seed-borne fungi. Proc. Nat. Acad. Sci. India, B:42(2):81-84.
* Seed coat leachates and seed extracts of sesame decreased spore germination of Fusarium oxysporum, F. solani and Curvularia lunata (Cochliobolus lunatus). Culture filtrates of the fungi inhibited seed germination of the plants.

389. BHARGAVA, S.N. and D.N. SHUKLA. 1980. Losses of oil content due to fungal invasion. Nat. Acad. Sci. letters. 3(5):141-142.
* The two most frequently encountered fungi, Fusarium equiseti and F. oxysporum casused a slight reduction in oil content of seeds of sesame when

incubated for 45 days.

390. BOSE, A. and B. NANDI. 1982. Effect of some predominant storage fungi on physico-chemical properties of safflower and sesame oil. Phytopathologische Zeitschrift. 104(4):357-363.
* Aspergillus ochraceus and Rhizoctonia solani caused maximum reduction in oil content of sesame seeds. Deteriorated oil samples showed change in colour, iodine value and saponification with prolonged incubation depending on the fungus and substrate.

391. BOSE, A. and B. NANDI. 1985. Role of enzymes of storage fungi in deterioration of stored safflower and sesame seeds. Seed Res. 13(2):19-28.
* Cellulase was produced in culture best by Aspergillus fumigatus, A. candidus and Rhizoctonia solani; endopolygalacturonase and lipase by A. flavus. Reduction in germinability and oil content and increase in fat acidity were most pronounced in seeds inoculated with A. flavus, A. fumigatus, and R. solani.

392. CHAUHAN, R.K.S. and S. CHAUHAN. 1984. Seed-borne infection of Myrothecium in sesamum, tomato, chillies and cowpea and its damage to seed and seedlings. Indian Phytopath. 37:401-402.
* The pathogenic potentials of Myrothecium were tested in relation to seed viability, germination and formation of seedlings. The toxic metabolities produced by pathogen in culture filtrate had phytotoxic effect on seeds and healthy plants.

393. DAFTARI, L.N. AND O.P. VERMA. 1972. Control of seed borne infection of Macrophomina phaseoli (Sclerotium bataticola) on sesamum seeds. Bull. Grain Tech. 10:44-46.
* Efficacy of seven fungicides were tested for eradication of Macrophomina phaseoli on sesamum seeds under laboratory condition. Captan and Agrosan G.N. (2 gm/kg seed), Mercuric chloride and Ceresan wet (0.1% for 3 minutes) and Aureofungin (20 ppm for one hour) gave the complete control of seed-brone infection in affected seeds. In addition to disease control, Captan also induced maximum germination of seeds and vigour of the seedlings.

394. DAFTARI, L.N. and O.P. VERMA. 1973. Effect of aureofungin on seedling mortality and growth of two varieties of sesame with seed-borne infection of Fusarium solani. Hindustan Antibiotics Bull. 15(3):91-92.
* Seed treatment with aureofungin at 20ppm reduced seedling mortality due to F. solani by 90.2% in a susceptible var. and increased germination and seedling vigour.

395. DALBIR SING., S.B. MATHUR and P. NEERGAARD. 1983. Systemic seed transmission of Alternaria sesamicola in Sesamum indicum. Trans. Brit. Mycol. Soc. 80(3): 570-571.
* In further studies, seed infection caused pre and post emergence loss of young seedlings and death of older plants. In a test sample of infested seed, those which failed to germinate were covered with conidia of the fungus. The pathogen was isolated from normal appearing as well as stunted plants indicating that it can invade the whole plant system without showing symptoms, and that seed from symptomless plants are not necessarily pathogen free, stunted plants with brown-black lesions bore no flowers.

396. EL-KADY, I.A., O.M.O. EL-MAGHARABY and S. SABER. 1986. Halophilic or halotolerant fungi of four seeds from egypt. Cryptogamic, Mycologic. 7(4):289-293.
* Asperigillus ochraceus, A. sydowi, A. amstelodami, A. niger, A. montevidensis, A. ripens, Penicillum chrysogenum, and P. jensemi were isolated from market samples of sesame seeds on 15% Nacl-water agar.

397. GOBELEZ, M. 1960. Observations sur quelques champigons parasites nouveaux ou peu connus de la Turquie. (Notes on some new or little known parasitic fungi of Turkey). Phytopathology. 39(1):94-98.
* A description from lab. Rech. Agron., Fariques a Sucre Eskisehir of Alternaria sesami (seed borne) on sesame.

398. HUSAIN, S.S. and M.A. AHMED. 1971. Studies on stored food grain fungi. Part II. Fungi from oil seeds and Plantago ovata. Pakis. J. Scient. Ind. Res. 14(1-2):137-141.
* Moisture was highest (15.2%) in sesame. Aspergillus spp. were the most prevalent (56%). Seed disinfection with 1/1000 $HgCl_2$ reduced the number of organisms isolated. 15 fungal spp. were isolated from sesame.

399. JANI, S.M. and M.R. SIDDIQUI. 1981. Incidence and spread of seed-borne fungi of sesamum in Gujrat State. Proc. 3rd Int. Sym. Pl. Path., I.A.R.I., New Delhi, 14-18th Dec. 1981. 117 pp. (Abst).
* It was concluded that Macrophomina phaseolina and Corynespora cassiicola are well distributed in the regions from where the seed were collected.

400. KADIAN, O.P. 1972. Testing Sesamum orientale L. Seeds for diseases in Haryana. Har. Agric. Univ. J. Res. 2(1):41-44.

* In sesame seeds, species of Alternaria, Phytophthora, Fusarium, Xanthomonas and Pseudomonas were most commonly associated whereas species of Cercospora and Asperquillus were detected less frequently. Seven genera namely Alternaria, Phytophthora, Fusarium, Cercospora, Aspergillus, Xanthomonas and Pseudomonas were internally as well as externally seed borne and were also pathogenic. The seed infestations (%) with Phytophthora and Alternaria were comparatively higher than with other five genera. All these micro-organisms reduced seed germination and had adverse effect on the seedlings.

401. KAMALA, T. and R.N. RAO. 1982. Effect of three fungicides on Sesamum indicum L. var. madhavi. Geobios. 9(5/6):281-283.

* In seed treatment tests with Dithane Z-78 (Zineb), Difolatin (captafol) and Orthocide (captan), there was a decrease in seed germination, seedling growth and other quantitative growth and yield parameters, with increasing fungicide concentration captan proved the most phytotoxic.

402. KUMAR, K. and J.SINGH. 1984. Effect of fungicides on seed borne fungi in sesame during storage. Seed Res. 12(2):109-111.

* The mycoflora of seed stored in different types of container is described. Seed treatment with carbendazim @ 2g/kg seed performed best in eliminating all fungi except Aspergillus sesami, Curvularia lunata (Cochliobolus lunatus) and Dreschslera tetramera. Captan was next in effectiveness.

403. KUMAR, K. and J.SINGH. 1986. Effect of seed treatment of sesame upon germination and seedling emergence. Pesticides. 20(4):30-31.

* Bavistin (2g/kg) was better than Captan, Thiram or vitavax in improving germination and seedling emergence.

404. KUMAR, K., J. SINGH and H.K. SAKSNA. 1984. Fungi associated with sesamum seeds, their nature and control. Indian Phytopath. 37:330-332.

* Seventeen fungal species were found to be associated with the seeds of sesamum varieties T-4 and T-12. Thirteen fungal species were found to be pathogenic and reduced the seed germination by causing seed rot under laboratory conditions. Fusarium moniliforme and Rhizoctonia bataticola produced brown necrotic lesions on roots and later became seedling invader to cause root rot and seedling blight. Helminthosporium tetramera and Alternaria sesami produced brown necrotic spots on leaves. The fungicides like Bavistin and Vitavax were most effective in eliminating the seed brone fungi.

405. KUSHI, K.K. 1977. Studies on the seed-borne pathogens of sesamum (Sesamum indicum L.), M.Sc. (Ag.) Thesis, J.N. Agricultural University, Jabalpur, India.

* Three important seed-borne pathogens, viz., Macrophomina phaseoli, Corynespora cassiicola and Alternaria sesami were included for detailed study. All the three fungi were able to grow on seven media tested. Czapek's medium was the best for growth, while Richards's medium and Asthana Hawker's medium were best for sporulation. In vitro testing of chemicals revealed that Captan and Ceresan wet proved to be superior in vivo studies.

406. KUSHI, K.K. and M.N. KHARE. 1979. Comparative efficacy of five methods to detect Macrophomina phaseolina associated with Sesamum Seeds. Indian Phytopath. 31(2):258-259.

* Higher counts of M. phaseolina were detected in untreated seasame seeds by the standard blotter method or testing on a selective medium, PDA containing PCNB (quintozene) than in the deep freezing blotter or blotter method with pre-treated seeds or on plain PDA.

407. KUSHI, K.K. and M.N. KHARE. 1979. Seed borne fungi of sesame (Sesamum indicum) and their significance. Seed Res. 7(1):48-53.

* Among 26 samples, Macrophomina phaseolina was associated with 23, Corynespora cassiicola with 11 and Alternaria sesami with 10. Isolates of all were pathogenic resulting in seed rot, pre- and pos temergence losses, stem rot and leaf spots.

408. MATHUR, S.B. and F. KABEERE. 1975. Seed borne fungi of sesame in Uganda. Seed Sci. & Tech. 3(3/4):655-660.

* Sesame seed samples from a diseased field at Sendusu and from Research Station at Kawanda and Serere were infected with Alternaria sesami (CMI Map 410), Corynespora cassiicola (both new records for Uganda), Cercospora sesami, Fusarium moniliforme (Gibberella fujikuroi), F. oxysporum and Verticillium dahliae. Heavy infections, 67-87% of Alterraria sesami and 25-68% of Cercospora sesami were recorded in all 4 samples whereas in the rest infections were in trace amounts or moderate. The blotter method was superior to agar planting. Seed-borne infection cause heavy seed rot and seedling mortality and the poor germination at Sendusu Farm is attributed to high combined infection by Alternaria sesami and Cercospora sesami.

409. MISHRA, R.R. and R.S.KANAUJIA. 1973. Studies on certain aspects of seed-borne fungi. II. Seed borne fungi of certain oil seeds. Indian Phytopath. 26(2):284-294.

* The effects of seed coat leachates and seed extracts on some of the 29 fungi isolated from Brassica spp, S. indicum, Ricinus communis and linseed were studied and also the effects of some culture filtrates on germination and seedling growth.

410. MONDAL, G.C., D. NANDI and B. NANDI. 1981. Studies on deterioration of some oil seeds in storage. I: Variation in seed moisture, infection and germinability. Mycologia. 73(1):157-166.

* An account of the effects of storage for various intervals upto one year on the seed of sesame.

411. MONDAL, G.C., D. NANDI and B. NANDI, 1985. Allyl-isothiocyanate as an effective post harvest preservative of seeds. Seed Sci. & Tech. 13(3):529-536.

* Mustard seed oil was effective as a preservative at 0.1% against fungal infection of sesame seed in natural storage than propionic acid. No phytotoxicity was recorded for allyl-isothiocyanate at 0.1%.

412. MONDAL, G.C., D. NANDI and B. NANDI. 1987. Effect of hydrolytic enzymes of storage fungi on seed deterioration. Acta Agro. Hungarica. 36(1):125-132.

* The production of cellulase and endo-polygalacturonase (endo-PG) of some storage fungi like Aspergillus fumigatus, A. funiculosus, A. niger and A. chevalieri isolated from stored sesame was studied on liquid basal and seed media.

413. NANDI, D., G.C. MONDAL and B. NANDI. 1981. Studies on deterioration of some oil seeds in storage changes in oil content, fat acidity value and germinability. Proc. 3rd Int. Sym. Pl. Path. IARI, New Delhi, 14-18th Dec. 1981, 175pp. (Abst.).

* Aspergillus niger and A. fumigatus caused deterioration of sesame seeds in storage.

414. NANDI, D., G.C. MONDAL and B. NANDI. 1982. Studies on deterioration of some oil seeds in storage. 3. Effects of different storage temperatures and relative humidities on seed moisture, germination and infection. Seed Sci. Tech. 10(1):141-150.

* Seeds of sesame, collected after harvest or from store houses, and stored under various temperatures and relative humidities were studied in respect of germination and infection by field and storage fungi.

415. RAMAIAH, K.S. and M.N.L. SASTRY. 1980. Seed mycoflora of Sesamum (Sesamum indicum L.). Mysore J. Agric. Sci. 14(3):341-344.

* Seed borne fungi of sesame are reported.

416. RAMAIAH, K.S. and M.N.L. SASTRY. 1983. Chemical control of the seed mycoflora of sesamum. Mysore J. Agric. Sci. 17(2):141-143.

* Maximum seed emergence was noted in seeds treated with Captan and Bavistin. Captan and Duter (Fentin hydroxide) gave a broad spectrum effect.

417. REDDY, A.S. AND S.M. REDDY. 1982. Two unrecorded fungi on seeds of sesamum (Sesamum indicum Linn, Drechslera neargaardi, Phoma nebulosa). Curr. Sci. 51(17):844-845.

* Drechslera neergaardi and Phoma nebulosa were recorded for the first time in sesamum seed.

418. REDDY, A.S. and S.M. REDDY. 1982. Changes in the activity of different enzymes during the germination of sesamum seeds under the pathogenesis of two seed- borne fungi. Proc. Nat. Seminar, Seed Pathology, TNAU, Coimbatore, Dec. 30-31st, 1982, 84-87.

*Activity of Alkaline and acid Phosphatase, Esterase, Peroxidase and Polyphenol oxidase in sesamum seed has been studied under the influence of M. phaseolina and Phoma nebulosa.

419. REDDY, A.S. and S.M. REDDY. 1983. Elaboration of mycotoxins by fungi associated with Til (Sesamum indicum L.). Curr. Sci. 52:613.

* Thirty six fungal species were obtained from 105 seed samples of til several species of Aspergillus, Fusarium as well as Penicillium citrinum are capable of elaborating a very wide range of mycotoxins.

420. REDDY, A.S. and S.M. REDDY. 1983. Lipase activity of two seed-borne fungi (Macrophomina phaseolina, Phoma nebulosa) of sesame (Sesamum indicum). Folia Microbiologica (Czechoslovakia), 28(6):463-466.

* Lipase activities of sesame seed-borne fungi was recorded.

421. REDDY, A.S. and S.M. REDDY, 1983. Influence of seed moisture of fungal succession of seeds of sesamum (Sesamum indicum). Seed Research 10(2):120-124.

* Fungal succession on sesame seeds with different moisture levels was analysed monthly. Incidence varied with moisture content. Alternaria alternata

was abundant only in the initial stages. Aspergillus flavus predominated while Macrophomina phaseolina and Rhizoctonia solani were associated only with seeds of high moisture content. The seed mycoflora at first increased with storage time but subsequently, decreased. Seed germination increased with storage time.

422. SACHIDANANTHAM, K., S. PONNIAH., S. NATARAJAN, and S.M. RAO. 1983. Effect of seed treatment with fungicides on the viability of some oilseeds during storage. In Proceedings of National Seminar on Management of Diseases of Oilseed crops, Madurai, India, Tamil Nadu Agricultural University: 92-94.

* Result of fungicide seed treatments of groundnut, sesame and sunflower are tabulated. Dithane M-45 (macozeb) performed best.

423. SHARMA, K.D. 1981. Biodeterioration of Sesamum oil in Situ by fungi. Indian Phytopath. 34(1):50-53.

* The 8 most abundant fungal spp. isolated during sesame seed storage were selected for further study. All could reduce the quantity of oil in seeds and the quality was also considerably affected.

424. SHARMA, S.M. and B.N. REDDY. 1983. Research on sesamum makes headway. Indian Fmg. 32(12):3-10.

* Seed treatment using Thiram at the rate of 300 g/100 kg of seed is good for seed-borne diseases.

425. SHUKLA, D.N. and S.N. BHARGAVA, 1976. Fungi isolated from seeds of Oil crops. Proc. Nat Acad. Sci. India. 46(B):442-444.

* Six fungi were isolated from sesamum seed.

426. SHUKLA, D.N. and S.N. BHARGAVA. 1977. Some studies on Fusarium solani (Mart.) (Sacc). Isolated from different seeds of pulses and oil crops. Proc. Nat. Acad. Sci. India, 47B (4): 199-203.

* Fusarium solani was associated with seed of sesame and pathogenic to seedlings of the crop. Growth and sporulation were best at pH 5.5-6.5 and at 22-28°C. Agrosan (Phenylmercury acetate), Benlate (Benomyl), Blitox 50 (Copper oxychloride), Ceresan (Methoxy ethylmercury chloride), Kirticopper, Plantvax (oxycarboxin), Thiram and Vitavax (Carboxin) inhibited growth of fungus in culture.

427. SHUKLA, D.N. and S.N. BHARGAVA. 1978. Effect of moisture on seed fungal Flora. Proc. Nat Acad. Sci. India. 48B (4):199-200.

* At a low moisture content (<8.5%) seeds of sesame were free from fungal associations. At 10.5% moisture, many seeds were infested.

428. SINGH, B.K. 1987. Oil propertis of sesamum seeds at different relative humidities under infestation. Indian Phytopath. 40(3):356-359.

* At high RH, percent oil and iodine value decreased while saponification value and fatty acids increased. Aspergillus flavus, Drechslera hawaiiensis and Fusarium moniliforme were found frequently on sesamum seeds.

429. SINGH, B.K. and T. PRASAD. 1979. Effect of seed-brone fungi on the cholesterol of sesame seed. Seed Res. 7(2):165-167.

* Aspergillus flavus and Aspergillus niger inoculations decreased the cholesterol level of the seed.

430. SINGH, B.K. and T. PRASAD. 1983. Effect of seed-borne fungi on the physico-chemical properties of sesamum seed oil. J. Indian Bot. Soc. 62:48-53.

* A large number of fungi are reported to bring about several physico-chemical changes in sesamum seeds and degrade seeds constituents.

431. SINGH, B.P., Y.K. SHARMA and B.N. SHUKLA. 1972. Role of seed-borne pathogens in reducing nutritive value of Sesamum indicum seeds. Proc. Nat. Acad. Sci. India, 42B (4): 440-441.

* Infected seeds invariabily yielded Macrophomina phaseoli (Macrophomina phaseolina). The oil content was greatly reduced. Protein and carbohydrate values were also somewhat lower.

432. SINGH, D., S.B. MATHUR and P. NEERGAARD. 1980. Histological studies of Alternaria sesamicola penetration in sesame seed. Seed Sci. & Tech. 8(1):85-93.

* In 3 white-seeded sesame seed samples having vary high and moderate incidence of Alternaria sesamicola, the dormant mycelium of the fungus usually occured in subepidermal layers of seed coat and occasionally in endosperm and embryo. In severely infected seed it invaded all parts including the embryo, even sporulating within the seed. Heavy aggregation of mycellium in hilum region suggested that it penetrated through this point whereas thick inner cuticle of seed coat and outer cuticle of endosperm appeared to resist its inward penetration.

433. SINGH, T. and D. SINGH. 1983. Seed-borne mycoflora of sesame with special reference to Rajasthan. Indian J. Mycol. & Pl. Pathol.

13(1):32-41.

* Out of 24 fungi isolated from sesamum seed, Alternaria sesami, Cephalosporium acremonium., Fusarium oxysporum f. sp. sesami, F. solani and Macrophomina phaseolina were important pathogens. The presence of Phytophthora parasitica var. sesami was detected in microtome sections of seeds.

434. VAIDEHI, B.K., G.V. JAGADAMBA and P. LALITHA. 1985. Effect of culture filtrates of some fungi on germination of seeds and on seedlings of some oil seeds. Indian Bot. Reporter. 4(1):92-94.

* The culture filterates of Aspergillus flavus, Fusarium oxysporum, Penicellium citrinum, P. rubrum and Alternaria sesami reduced germination percentage and root and shoot elongation of sesame with the maximum on the 30th day.

435. VAIDEHI, B.K. and P. LALITHA. 1985. Fungal succession in sesamum seeds. Indian J. Bot. 8(1):39-48.

* Among the 54 species isolated from sesame seed Alternaria, Curvularia, Drechslera, Fusarium and Cladosporium were in abundance.

436. VALAND, G.B., N.Y. GAIKWAD and A. J. PATEL. 1983. Seed borne fungi of some sesame varieties. Indian J. Mycoi. Pl. Pathol. 13(-3): 363-364.

* In all, 16 fungal species were recorded on sesame seed. Among pathogenic fungi Fusarium and Macrophomina phaseoli were predominant.

437. VERMA, O.P. and L.N. DAPTARI. 1974. Amount of seed-borne inoculum of Macrophomina phaseoli and its effect on mortality and growth of sesame seedlings. Indian Phytopath. 27:130-131.

* Amount of seed-borne inoculum (number of sclerotia on seed surface) was found to affect the seedling mortality and growth. Depending upon number of sclerotia per seed, seedling mortality of three varieties viz., Ex-116, G-5 and Limbdi-93 were 19-56, 7-26 and 26-53 percent respectively.

438. VIDHYASEKARAN, P., D. LALITHA KUMARI and C.V. GOVINDASWAMY. 1972. Role of seed-borne fungi on the deterioration of quality of gingelly seeds. Indian J. Microbiol. 12(2): 104-107.

* The 17 fungal spp. isolated from Sesamum are listed and their effects on oil and free fatty acid content, germination and seedling growth assessed.

439. VYAS, S.C., I. KOTWAL, K.V.V. PRASAD and A.C. JAIN. 1984. Note on seed-borne fungi of sesamum and their control. Seed Res. 12(1): 93-94.

* Seven fungi were found to be associated with sesamum seeds. Carbendazim, Benomyl, Captan, and Thiram increased the germination percentage and reduced seed-borne mycoflora.

440. VYAS, S.C. and R. SINGH. 1984. Effect of chemical weed control on seed-borne fungi of soybean, sesamum and peas. Indian Phytopath. 37:422.

* In Herbicides amended plots, seeds were completely free whereas from control plots more number of mycoflora were isolated. When seeds of sesamum were artificially infested with 0.005% herbicides, acifluorfin and Bentazone (Post emergence) complete eradication of seed-borne fungi was recorded. The seedlings emerged from the treated seeds were normal.

441. WASNIKAR, A.R., S.M. SHARMA and K.V.V. PRASAD. 1987. Seed borne Microflora of sesamum and their significance. J. Oilseeds Res. 4(1):141-144.

* Incidence of 9 fungi and 2 bacteria on seeds of 12 cv. of sesamum was recorded.

442. YU, S.H. 1981. Singificance of sesame seed-borne fungi, with special reference to Corynespora cassiicola. Korean J. Plant Prot. 20(4):183-190.

* The predominant fungi in sesame seed samples were Alternaria sesami, Alternaria sesamicola, Alternaria tenuis (Alternaria alternata) and Corynespora cassiicola. All were controlled by pre-treatment with chlorine, with the exception of Corynespora cassiicola. This pathogen caused severe seed rot and seedling mortality. Corynespora cassiicola induced severe leaf and stem blight in inoculation experiments resulting in death. Alternaria sesami. Alternaria sesamicola, Alternaria longissima, and Corynespora sesami also produced mild to severe leaf spotting and blight when conidial suspentions were sprayed on plants. Fusarium oxysporum and Macrophomina phaseolina in soil inoculation experiments caused seed rot and seeding blight.

443. YU. S.H. and J.S. PARK. 1980. Macrophomina phaseolina detected in seeds of Sesamum indicum and its pathogenicity. Korean J. Plant Prot. 19(3):135-140.

* The pathogen was detected in 7 to 12 seed samples tested and is reported for the first time from Korea. Macrophomina phaseolina caused severe reduction in seed germination and seeding stand of

sesame and induced symptoms of charcoal rot in potato tubers.

444. YU, S.H., S.B. MATHUR and P. NEERGAARD, 1982. Taxonomy and pathogenicity of four seed-borne species of Alternaria from sesame. Trans. Brit. Mycol. Soc. 78(3):447-458.

* Alternaria sesami, Alternaria sesamicola, Alternaria tenuis (Alternaria alternata) and Alternaria longissima were detected in Korean seed samples of Sesamum. Alternaria sesamicola was the predominant sp. Seed infection in some samples being 30-68%. Alternaria sesamicola was the predominant sp. Alternaria sesami and Alternaria longissima occured only at 1-3%. Detailed descriptions are given on habit, characters of the 4 spp. and on the morphology of conidia, supported by photographs and diagrammatic characters. Based on the original descriptions and the isolates studied it is concluded that Alternaria sesami and Alternaria sesamicola are 2 distinct spp. Alternaria longissima, generally regarded as a saprophyte, was for the first time found to be pathogen, producing zonate leaf spot, foliage blight, stem necrosis and spots on capsules of sesame. Alternaria sesami and Alternaria sesamicola caused severe symptoms, seed germination and seedling stand were reduced.

D. PHYLLOSPHERE FUNGI

445. SHARMA, K.R. and K.G. MUKERJI. 1974. Incidence of pathogenic fungi on leaves. (on Sesame orientale). Indian Phytopath. 27(4):558-566.

* Incidence of some pathogenic species of Candida, Macrophomina, Colletotrichum, Alternaria, Fusarium and Phoma on ageing, senescing, and decaying leaves of sesamum was investigated.

446. VENKATESHWARLU, K. and C. MANOHARCHARY. 1976. Leaf surface microfungi of some oil yielding and medicinal plants. Geobios. 3(1):29-30.

* The number, distribution and frequency of phyllosphere fungi on sesame in relation to pH and moisture was investigated.

E. RHIZOSPHERE FUNGI

447. AGNIHOTHRUDU, V. 1953. Soil conditions and root diseases. VIII. Rhizosphere microflora of some of the important crop plants of South India. Proc. Indian Acad. Sci. Sect. B.37 (1) :1-13.

* Further work in this series showed that Aspergillus spp. and Penicillium spp. predominated in therhizospheres of sesamum plants.

448. AGNIHOTHRUDU, V. 1955. State in which fungi occur in the rhizosphere naturwissenschaften. 42(18): 515-516.

* At the botany Lab, Univ. of Madras, India adapting Mclennan's method, the author studied a fungal population of rhizospheres of 15 crop plants including sesame. Most of fungi named tended to occur in vegetative rather than in the sporing state whereas in the soil distant from the roots 70 to 90% of colonies were derived from spores. The numbers on desiccated and fresh root samples collected during various stages of growth showed similar fluctuations. There was a high correlation coefficient (+0.9) between the number of spore derived colonies and the total of fungi in association with all the plants examined. Desiccated roots harboured no Fusarium spp. or Neocosmospora vasinfecta and only 0 to 20% Macrophomina phaseoli.

449. BAGYARAJ, J., and G. RANGASWAMY. 1966. On the varieties in Rhizosphere effects of some crop plants. Cuyr. Sci. 35(9): 238-239.

* When 5 different crops were grown under similar conditions in the same field and the microflora at various depths estimated after 20 and 40 days the rhizosphere effect varied with the crop, soil depth, plant age and type of micro-organism. Legume roots had more organisms particularly bacteria than non-legumes. Pigeon pea had the maximum rhizosphere effect on bacteria, cotton on actinomycetes and sesame on fungi.

450. MANOHARACHARY, C., K. VENKATESHWARLU., and P.RAMARO. 1977. Studies on mycoflora of rhizosphere and non-rhizosphere soils. Geobios 4(2):67-68.

* The rhizosphere and non-rhizosphere mycoflora of sesame and other crops is investigated.

451. MISHRA,B.K., A.MISHRA., and B.PADHI. 1984. Effect of defoliation on the microbial population and enzyme activity in the rhizosphere of Sesamum orientale L. J. Orissa Bot. Soc. 6(1): 31-34.

* Defoliation stimulated invertase activity and increased the fungal, bacterial and actinomycete populations in the rhizosphere compared with those of intact plants.

452. SIRRY, A.R., S.N. SALEM, M.A. ZAYED., and D.ANWAR. 1981. Rhizosphere microflora of sesame plants infected with root-rot diseases and their activities in antagonizing the main pathogens. Egyptian J. Microb. 16(1-2):65-68.

* Antagonistic studies showed that Streptomyces sp. was the most potent microorganism against both

Fusarium oxysporum and Sclerotium bataticola, the main pathogen of root-rot disease of sesame plants. Antagonism could be effectively realized when the incubation temp. ranged 25-35°C and the organisms were grown on Zapek's medium containing lactose for F. oxysporum and arabinose for S. bataticola. Aspergillus sp. was the most antagonistic rhizospheric fungus tested against the root-rot pathogens of sesame plants followed by Penicillium sp.

453. VIJAYALAKSHMI, M., and A.S.RAO. 1988. Vasicular-arbuscular Mycorrhizal associations of sesamum. Proc. Indian Aca. Sci. Pl. Sci. 98-(1):55-59.

* Glomus, Gigaspora and Sclerocystis spp. were found in the rhizosphere soil of sesame plants.

F. BACTERIAL DISEASES

Pseudomonas

454. AITMAN, J., A.K. ESLAMI , and A.VAZIRI. 1972. Disease of crops in the Khujestan Province of South Western Iran. Plant Dis. Reptr. 56(12): 1067-1069.

* Pseudomonas solanacearum (CMI Map 138) causing bacterial wilt of sesame is among the many records tabulated.

455. AKHTAR, M.A. 1985. Bacterial new records. Pakistan. Bacterial blight of sesame. F.A.O. Plant Prot. Bull. 33(2):76.

* This is the first record of Pseudomonas syringae pv. sesami as a pathogen of sesame in Pakistan.

456. ANSARI, M.M., and T. RAM. 1987. Bacterial wilt of sesamum caused by Pseudomonas solanacearum - a new record from Andaman and Nicobar Islands. Indian Phytopath. 40:236.

* The bacterial wilt of sesamum caused by Pseudomonas solanacearum was reported from Andaman and Nicobar Islands.

457. BREMER, H., H.ISMEN., G.KAREL., H.OZKAN., and M.OZKAN. 1947. Contributions of the knowledge of the parasitic fungi to Turkey 1. Rev. Fac. Sci. Univ. Istanbul, Ser B, 13(2):122-172.

* Pseudomonas sesami is believed to be the causal organisms of a wilt of sesame apparently new to Turkey but possibly identical with the bacteriosis described by Malkoff from Bulgana. Primary infections on the leaves often appear as angular, vein delimited, brown spots with blackish brown margins, attaining a diameter upto 2 cm. and coalescing to produce a dark network on a brown ground. Primary infections on the stems commonly occur at the site of insertion of petioles while girdling may lead to the collapse of whole plant. Sections through the stems reveal the permeation of the cortex by large irregular lacunae in which the tissue is totally disorganized and filled with bacteria. In severe case the vascular bundle ring is disrupted in places and infection advances into medulla while the vessels may also contain bacteria, these were isolated in pure culture on potato agar on which they formed circular slimy to liquid lustrous, whitish grey colonies.

458. CULP, T.W. 1964.- Race 2 of Pseudomonas sesami in Mississipi. PLant Dis. Reptr. 48(2):86-87.

* A race of Pseudomonas sesami attacked sesame var. Margo previously attacked in Mississipi. This is either race 2 introduced on seed from Texas or it developed independently in the nurseries.

459. CURZI, M. 1934. Of African fungi and disease II. Concerning Pseudomonas parasitic on plants in Italian Somaliland. Bull. R. Staz. Pat. Veg., N.S. II(1):173-184.

* The sesame bacteriosis caused by Bacterium sesami is both vascular and parenchymatous and has many points in common with the disease produced on various hosts by Bacterium solanacearum, it is perhaps identical with the sesame disease attributed to latter organism by Kornauth and Smith in 1903 and by Honing in 1913. Smith considered both diseases to be identical and due to Bacterium solanacearum which however Nakata and Kovacevski have shown to be distinct from Bacterium sesami.

460. DEMETRIADES, S.D., D.G. ZACHOS, C.G. PANAGOPOULOS., and C.D. HOLEVAS. 1959. Rapport sommaire sur les maladies des plantes cultivees observees en Grece au cours de I' annee. 1959 (Brief report on the plant diseases observed in Greece during the year 1959). Ann. Inst. Phytopath. Benaki, N.S. 3(2):33-41.

* This report compiled on the usual lines include the first record of Pseudomonas sesami on sesame in Greece.

461. DUNLAP, A.A. 1943. Two bacterial diseases in Texas. Plant Dis. Reptr. 27:274.

* Bacterial leaf spot and blight diseases on sesamum were recorded from Texas.

462. DURGAPAL, J.C., P.N. PATEL, and Y.P. RAO. 1969. Resistance in crops to bacterial diseases in India. I. Evaluation of sesamum for

for resist-ance to bacterial leaf spot disease incited by Pseudomonas sesami. Indian Phytopath. 22(2):292-294.

* Seventy indigenous and 49 exotic accessions of sesame were evaluated in field trails and lines rated as moderately resistant and resistant +14 additional lines were then tested in glass house. Among 9 classified as resistant in field, 6 remained resistant and 3 were moderately resistant in glass house inoculations. Final ratings of indigenous and exotic lines are given.

463. DURGAPAL, J.C., and Y.P. RAO. 1967. Bacterial leaf spot of sesamum (Sesamum orientale L.) in India. Indian Phytopath. 20(2):178-179.

* A strain of Pseudomonas sesami differing in its ability to produce acid from sucrose and glycerol in addition to glucose is newly recorded for India causing bacterial leaf spot of sesame (CMI map 398).

464. DURGAPAL, J.C., Y.P. RAO, and R. SINGH., 1969. Eradication of infection of Pseudomonas sesami from sesamum seeds. Indian Phytopath. 22(3): 400-402.

* Of the 3 methods of treatment of infected seed compared, hot water at 51-52°C for 10 minutes and soaking in 0.025% agrimycin solution+ 0.05% wettable ceresan were both successful in eliminating the pathogen, but seedlings from seed surface sterilized with 0.1% Hgcl$_2$ 12 developed the disease 25 days after sowing.

465. HAYWARD, A.C., and J.M. WATERSTON. 1964. Pseudomonas sesami. Commonwealth Mycol. Inst. Descri. Pathog. Fungi Bact. 17:18

* Pseudomonas sesami is characterised.

466. IVANOFF, B. 1926. Cryptogamic parasities of cultivated plants recorded in the course of last five years. (1921-1925). Sofia. 7(3): 14-17.

* Bacillus sesami Malk. was found in two localities attacking the leaves and stems of sesame a thick, gummy, rapidly drying substance exuded from the surface of the black spots formed by the organism of the stems usually breaking down at the point attacked.

467. KOROBKO, A.P., and E.WONDIMAGEGNE. 1987 Bacterial diseases of sesame (Sesamum indicum L.) in Ethiopia. Oil crops Newsletter 4:77-84.

* Severe infections of Xanthomonas campestris pv. sesame and Pseudomonas syringae pv. sesame were recorded from Ethiopia. Erwinia herbicola was often associated with the above pathogens. Stem rotting was caused by Erwinia sp. ceresan, chiprosan and polychom @ 0.5% completely controlled the seed-borne pathogens.

468. KOVACPVSKI, I.C. 1930. New investigations of the etiology of black rot of sesame. Annuarie Univ. de. Sofia, Fac. Agron. et. Sylvicult. 1929-1930. 8:455-468.

* This is an account of the authors study of the bacterial disease of sesame which was first recorded and described from Bulgaria under the name 'black rot' by Malkoff in 1903 and was attributed by him to Pseudomonas (Bacterium) sesami and Bacillus sesami, either singly or in combination. Inoculation experiments in 1929 showed, however, that the last named organism is not pathogenic to sesame seedlings. Malkoff's results being explained by the fact that as indicated by his own description, he worked with isolations the purity of which was questionable. Bacterium sesami on the other hand reproduced all the symptoms observed in nature, which are also described this proving it to be the real cause of the disease. Characters of the pathogen are described in detail.

469. MALKOFF, K. 1903. Eine bakterienkrankheit auf Sesamum orientale in Bulgarien, Cont. Bakteriol. Abt. 2(II):333-336.

* Bacterial leaf spot was recorded from Bulgaria as black rot.

470. MALKOFF, K. 1906. Weitere untersuchungen uber die bakterienkrankheti auf Sesamum orientale. Centrablatt. Firr Bakteriologia Parasitenkundeund infektionskrankheiten 2(16):664-666.

* Pseudomonas (Bacterium) sesami was reported as causal organism of bacterial leaf spot of sesamum.

471. MANOFF, F 1926. Cryptogamic parasites of cultivated plants recorded in course of the last 5 years. Agric. Int. Period Bull. Sofia. 7:14-27.

* Bacterial leaf spot of sesamum was recorded from sofia

472. NAKATA,K. 1930. Comparative studies of Bacterium sesami with Bacterium solanacearum and Bacterium sesamicola Ann. Phytopath. Soc. Japan,2 (3):229-243.

* An investigation was made of the relationships between three bacterias recorded as the causal organisms of sesame diseases viz, Bacterium sesami, Bacterium solanacearum and Bacterium sesamicola. The results of comparative studies of the morphology, cultural characters and physiological features

of three bacterias indicated that Bacterium sesami and Bacterium sesamicola are identical but are distinct from Bacterium solanacearum. The correct name of former is considered to be Bacterium sesami. Malkoff, syns Pseudomonas sesami Malk; Bacterium sesamicola Takimoto Bacterium sesami causes formation of dark brown spots on sesame leaves and stem in Bulgaria India, Japan and Korea.

473. OKABE, N and M. GOTO. 1961. Studies on Pseudomonas solanacearum XI, Pathotypes in Japan Rep. Fac. Agric. Shizuka Univ. 11:25-42.
* Thirteen pathotypes were defined according to differences in virulence for tobacco, sesamum, tomato, eggplant and groundnut. Many examples were encountered on Japanese soils which were infested with more than one type. Strains differentiated by biochemical properties, lysis by virulent or temperate bacteriophages, production of or sensitivity to bacteriocins and lysogenicity were not always correlated with differences in virulence and host range. All strains producing abundant brown pigment in culture media or diseased tissues failed to ferment lactose and classified as pathotype 4 which was avirulent for sesamum. Pathotype 3 was virulent to Sesamum and tomato only.

474. PEREGRINE, W.T.H. and D.R.W.WATSON. 1964. Annual Report of the Plant Pathology Section. Deptt. of Agriculture, Tanganyika.
* Pseudomonas sesami was found causing bacterial leaf spot of sesame but is not at present of economic importance.

475. PEREIRA, A.L.G. 1967. A study of Pseudomonas sesami, causal agent of a bacteriosis of sesame. Arq. Inst. biol., S.Paulo. 34(3): 113-125.
* Morphological, cultural and biochemical characters of this pathogen are described. It attacks many varieties, in Brazil, where it was first noted in 1942.

476. POOLE, D.D. and C.D.HEATHER. 1956. A preliminary note on a duo-complex of sesame bacterial leaf spot in Texas. Plant Dis. Reptr. 40:236.
* Bacterial leaf spot and blight disease of sesamum were recorded from Texas.

477. RATHAIAH, Y. 1984. Bacterial wilt of sesame. F.A.O. Plant Pro. Bull. 32(4): 143-144.
* Pseudomonas solanacearum on sesame is newly recorded in India.

478. ROSE, M.F. 1950. Progress Reports from Experiment Stations, season 1948-49. 172. Empire Cotton growing Corporation, 1950 Early resistant white, early maturing strain of sesame is resistant to Marad el Dam disease. (Bacterium (Pseudomonas) sesami).

479. SAPKAL, R.T. 1980. Studies on control of bacterial leaf spot of sesamum caused by Pseudomonas sesami Malkoff. M.Sc. (Ag.) thesis, J.N. Agricultural University, Jabalpur, India.
* Out of three methods of inoculation of leaves, infection infiltration method was efficient in producing typical symptoms. Out of nine antibiotics tested streptomycin Sulphate, Paushamycin and Plantomycin were effective in checking the growth of the pathogen, as well as in reducing the seedling infection by seed treatment. Twenty six vars viz., N 63-177-74-145 and Tc 325 remained free from disease.

480. SATHYARAJAN, P K., A.NASEEMA., and T.C. RADHAKRISHNAN. 1985 Bacterial wilt of Sesamum indicum L - A new record. Curr. Sci. India 54(6):288.
* Pseudomonas solanacearum on sesame is newly reported

481. SINGH, R.N. 1970. Out breaks and new records. Plant Prot. Bull FAO. 17(6):138-142.
* He reports an epidemic of bacterial leaf spot of sesame caused by Pseudomonas sesami. The disease symptoms of which are described was present in all 47 districts of Uttar Pradesh.

482. SUTIC, D , and W.J. DOWSON. 1962. Bacterial leaf spot of sesamum in Yugoslavia. Phytopath. Z. 45(1):57-65.
* Pseudomonas sesami is reported for the first time in Yugoslavia. At Fac. Agri. Zemun Belgrade and bot. School, Cambridge. A comparative study was made of the morphological, cultural, biochemical and pathogenic characteristics of bacterium isolates proved very virulent to sesame. Phaseolus vulgaris appeared to be a useful differential host, typical stem spots developed at inoculation sites enlarging to 4x8 mm, at first reddish they later turned violet, middle part being covered by a rich bacterial whitish exudate. Spots on inoculated pods were very similar but round.

483. TAKIMOTO, K. 1927. Sesame bacterial disease J. Pl. Prot. Tokyo. 8:433.
* A bacterial disease on sesame was described.

484. THOMAS, C.A. 1956. Control of bacterial leaf spot of sesame by streptomycin seed treatment. Phytopathology. 46:29.

* Seed of Palmetto sesame soaked for 30 minutes in solutions of 250, 500, 750, and 1000 ppm streptomycin were free from bacterial disease in comparison to untreated ones. Concentrations higher than 500 ppm reduced the rate of seeding growth under certain conditions.

485. THOMAS, C.A. 1965. Effect of photoperiod and nitrogen on reaction of sesame to Pseudomanas sesami and Xanthomonas sesami. Plant. Dis Reptr. 49(2):119-120.

* A short photoperiod of 12 hrs. light day with supplemental N was the most favourable for the development of Pseudomonas sesami vars. Venezuela 51 and Early Russian (field susceptible and field resistant respectively) both proving susceptible without supplemental N the former was susceptible or long (16 hrs.) photoperiods. Susceptibility of Venezuela 51 to Xanthomonas sesami was increased under short photoperiod whereas that of early Russian was increased by N under short but little affected under long photoperiod.

486. THOMAS, C.A. and R.G. ORELLANA. 1962. Resistance of sesame varieties and pathogenicity of strains of Pseudomonas sesami in relation to amino acids and reducing sugars. Phytopathology. 52(1):1-34.

* A new strain of Pseudomonas sesami attacked the higher to resistant var. Margo in commercial fields in Texas. In greenhouse and field tests, early Russian was resistant to both the old and the new strains. Varietal reaction depended on differences in the concentration of certain amino acids and in the ratio of reducing sugars to these acids. The strains were morphologically distinct. eg. their glucose; aspargine requirements.

487. THOMAS, C.A., R.G. ORELLANA., M.L. KINMAN. and G.W.RIVERS. 1962. A second pathogenic race of Pseudomonas sesami. Plant Dis. Reptr. 46 (4):248-250.

* Contains a more detailed account of work on this sesame pathogen.

488. URDANETA, U.R. and B.MAZZANI. 1976. Varietal difference in susceptibility to bacterial diseases of sesame (S. indicum L.) in Venezuela. Agron. Trop. 26(4):311-320.

* Susceptibility to various bacterial leaf spot (unspecified) was evaluated in 14 vars. Incidence was lower in Maporal, Morada, Ajimo, Atar 5-5 and local sesame A-15-13 introduced from Africa. Damage was more severe in a field with higher rainfall.

489. VAJAVAT, R.M., and B.P. CHAKARAVARTI 1978. Yield losses due to bacterial leaf spot of Sesamum orientale in Rajasthan. Indian J. Mycol. & Plant Path. 7(1): 97-98.

* Field experiments indicated that Pseudomonas sesami caused 21.07% loss in yield in a local susceptible sesame cv. during 1972 and 27.12% loss in 1973.

490. VAJAVAT, R.M. and B.P. CHAKARAVARTI. 1978. Survival of Pseudomonas sesami and effect of an antagonistic bacterium isolated from seed on the control of the disease in the field. Indian Phytopath. 31(3 :286-288.

* Pseudomonas sesami survived for 96 and 30 days in autoclaved and unautoclaved soil respectively and 11 months in sesame seed which appear to be the primary inoculum source. The antagonistic bacterium inhibited the growth of the pathogen in vitro. When field grown sesame leaves were inoculated with Pseudomonas sesami mixed with the antagonistic bacterium in the cell to cell ratios 1:14, 1:9 and 1:4 the disease control was respectively, 100% C. 100% and C.50% as compared to control.

491. VAJAVAT, R.M., B.P. CHAKARAVARTI. and K.L. JAIN, 1985. Inoculum concentration on symptom development, pathological changes after infection and multiplication of Pseudomonas syringae pv. sesami field grown sesame of different ages. Indian J. Mycol. & Pl. Pathol. 15(2):141-144.

* Min. Concn. of 1 x 10^3 and 1 x 10^4 cells/ml were necessary for symptom development by spray and carborundum inoculation method. Younger plants were more susceptible than older once.

492. VERMA, O.P., and L.N.DAFTARI. 1976. Chemical control of bacterial leaf spot of sesamum in Rajasthan. Indian Phytopath. 29(1):59-61.

* Treatment of sesame seed with agrimycin completely controlled seed borne Pseudomonas sesami and 94% germination occured. Tetracycline hydrochloride gave good control of seed infection but reduced germination to 57%. The best field control was given by agrymcine seed treatment followed by a spray when the disease first appeared in the field.

493. ZACHOS. D.G. and C.G.PANAGOPOULUS. 1960. The bacterium Pseudomonas sesami Malkoff in Greece. Ann. Inst. Phytopath. Benaki, N.S.3(2):60-64.

* Bacterial leaf spot (Pseudomonas sesami) of sesame reported for first time in Greece is described, it was found in several districts in summer 1959.

Xanthomonas

494. AKHTAR,M.A. 1986. Outbreaks and new records Pakistan. Bacterial leaf spots of sesame and pepper. F.A.O. Pl. Prot. Bull. 34(3):163.
* Xanthomonas campestris pv. sesami was recorded on sesame.

495. ANONYMOUS. 1965. Indian Agricultural Research Institute, New Delhi. Indian Institute of Sugarcane Research. Lucknow. Central Coconut Research Station, Kayangulum, Jabalpur Agric. Res., New Delhi, 5(3):181-182, 197-198; 225-226; 249.
* Xanthomonas sesami (map 398) infected 28 sesame vars. in Jabalpur in 1963-64.

496. ANONYMOUS. 1964. CMI: Descriptions of Pathogenic fungi and Bacteria. Set 2-sheets 11-20, Common wealth Mycological Institute, Kew, Surrey, England.
* This 2nd set prepared by Hayward, A.C. and J.M. Waterson contains descriptions of 10 bacteria, including Xanthomonas sesami and Pseudomonas sesami on sesame.

497. ANONYMOUS. 1980. Annual report of Kenana Research Station, 1976-1977. Abu Naama, Sudan, Ministry of Agric. Food and Natural Resources. 59 pp.
* The work of the Plant Pathology Dep. (1-9) includes a survey of seed-borne diseases of sesame and field trials of the relative susceptibility of sesame cvs. to Xanthomonas campestris pv. sesami.

498. ANONYMOUS. 1984. New disease found in previous years in Ethiopia - in coffee, tea, oilcrops, trees, shrubs and some other crops. EPC, Newsletter. No. 12:8.
* Bacterial disease on sesame was recorded.

499. ANONYMOUS. 1980. Annual report of Kenana Research Station, 1980-81, Sudan. Ministry of Agric., 30-33.
* A survey report of Bacterial blight caused by Xanthomonas campestris pv. sesami on sesame cultivars.

500. CHAND, J.N., S.C.MANDLOI. and S.N. KULKARNI. 1970. Studies on bacterial blight of sesamum (Sesamum orientale L.) caused by Xanthomonas sesami. Sabet and Dowson. Bull. Indian Phytopath. Soc. 6:10-23.
* Symptoms were more severe on young than on old leaves and late sowing (July) resulted in plants remaining stunted due to the disease whereas growth was good after June sowing. Bacteria multiplied rapidly in the leaves until the 3rd day when their number was maximum but they were x10 more numerous in young than in old leaves. Seed treatment with ceresan wet and streptocycline considerably reduced primary infection but 24 days after sowing all plants were infected, indicating a very rapid secondary spread.

501. CHAND, J.N., S.C. MANDLOI., and S.N. KULKARNI. 1970. Bacterial leaf blight of sesamum in Madhya Pradesh. Indian Phytopath. 23: 156.
* Xanthomonas sesami the blight pathogen causes considerable losses in Madhya Pradesh. Seed soaked for 30 min. in a mixture of ceresan wet (0.1%) and streptocycline (1000 ppm) and ceresan wet alone gave least seedling infection.

502. DURGAPAL, J.C. 1972. Albinism in Xanthomonas sesami. Curr. Sci. 46(8):274.
* An account of the occurrence of an achromogenic form of Xanthomonas sesami in a culture originating from an isolate obtained from sesame, followed by a discussion of the taxonomic implications.

503. HABISH, H.A. and A.H. HAMMAD. 1969. Seedling infection of sesame by Xanthomonas sesami. Sabet and Dowson and the assessment of resistant to the bacterial leaf spot disease. Phytopath. Z.64(1): 32-38.
* Seed or soil inoculations produced small, water soaked, dark green, marginal spots on the lower surface of cotyledons. In severe infections the lesions spread over the whole cotyledon, which became dry, mild attacks resulted in scattered dry brown spots. Infection of growing point caused seedling death, especially in more susceptible vars. Comparison with leaf inoculation and natural field infection showed that seedling infection could be used as a valid test for grading resistance of a large number of vars. within a short period under uniform conditions.

504. HABISH, H.A. and A.H. MAMMAD. 1970. Effect of certain soil conditions and atmospheric humidity on seedling infection by Xanthomonas sesami. Sabet and Dowson. Sudan Agric. J. 5(1): 30-34.
* Seedling infection of sesame was most severe at soil temperatures of 20-26°C and also occurred at 35°C but not at 40°. The incidence of leaf spot was

slightly affected by variation in soil moisture between 20 and 40% and in R.H. between 70 and 85% but the disease was most severe at 30-40% and 75-80% respectively. Seedling resistance was increased by the applications of N at 45 kg/ha but at 90-135 kg, germination and growth were retarded.

505. HABISH, H.A. and A.H HAMMAD, 1971. Survival and chemical control of Xanthomonas sesami. Plant Prot. Bull. FAO. 19(2): 36-40.
* Xanthomonas sesam, causing leaf spot of sesame survived in soil for 4-6 months (longer than other closely related spp) and on seeds for upto 16 months, giving infected seedlings. Of 15 chemicals tested for seed treatment Abavit B and Formalin were the most effective followed by Fertix 6704.

506. HAYWARD, A.C. and J.M. WATERSTON. 1964. Xanthomonas sesami. Common wealth Mycol. Inst. Descr. Pathog. Fungi & Bact. 16:1.
* It contains description of Xanthomonas sesami on sesame.

507. JAIN, A.C. and S.N. KULKARNI. 1967. Varietal reaction of Sesamum (S. orientale L.) to bacterial blight. JNKVV Res. J. 1(2):181-182.
* There was considerable variation in the reaction of sesame vars. to Xanthomonas sesami, T-58 proved resistant, M3-2 was highly susceptible and the rest were either susceptible or semi-resistant.

508. MALAGUTI, G. 1971. A severe bacterial disease of sesame in Venezuela. Agronomia trop. 21(4):333-336.
* A leaf spot caused by Xanthomonas sp. probably Xanthomonas sesami attacks plants of all ages particularly in the rainy season or during periods of high R.H. mostly at night. Extensive damage may be caused to leaves, petioles and flowers and stems resulting in defoliation and sterility.

509. NAYAK, M.L. and R.K.SHARMA. 1980. New weed host of bacterial blight of Sesamum. Indian Phytopath. 33(3):482.
* Xanthomonas (campestris pv.) sesami infected both sesame and Acanthospermum hispidum growing nearby at Jabalpur. Cross inoculations were positive. The bacterium could survive on dry, hanging leaves on the weed plants until the next season, thus providing a source of infection for the sesame crop.

510. OSMAN, H.E. 1985. New sesame varieties for the Sudan Central rainlands. Sesame & Safflower Newsletter 1:34-35.
* The sesame variety UCR 770011-2 or Kenana and A/1/9 or Ziraa-9 is fairly resistant to the bacterial blight (Xanthomonas sesami).

511. POPOV, P., J. DIMITPOV and S. GEORGIEV. 1980 2 new promising sesame cultivars. Resteniev'd Nauki. 17(2):19-23.
* Resistance to bacterial disease has been incorporated in these cultivars.

512. RAO, Y.P. 1962. Bacterial blight of sesamum (Sesamum orientale L.). Indian Phytopath. 15:297-298.
* A Xanthomonas sp. isolated from sesamum plants in 1957-58 with severe stem blight appears to distinct strain of Xanthomonas sesami in causing light brown spots on leaves and stems but not affecting the capsule. This is the first record of the bacterial disease on this host in India.

513. RAO, Y.P and J.C. DURGAPAL. 1966. Seed transmission of bacterial blight disease of sesamum (Sesamum orientale L.) and eradication of seed infection. Indian Phytopath. 19(4):402-403.
* In further studies, seed transmission of Xanthomonas sesami was proved. It could be prevented by seed treatment with hot water (50°C for 10 min) or a mixed solution of Agrimycin-100 (0.025%) and wettable Ceresan (0.05%) for 6 hrs.

514. SABET, K.A. 1967. Association of Xanthomonas sesami with two types of leaf spots affecting sesame. Nature, Lond. 213:813-814.
* Bacteria isolated from small, sharply defined, dark brown spots were identical with those from light brown spots and the latter caused dark brown spots in inoculations. It was concluded that both types of lesions are produced by Xanthomonas sesami and probably the differences are attributable to variations in the environment.

515. SABET, K.A. and W.J. DOWSON. 1960. Bacterial leaf spot of sesame (Sesamum orientale L.). Phytopath. Z. 37(3). 252-258.
* In the Sudan, there are 2 types of leaf spot on sesame both known as Marad ed Dum and widespread. One kind is small dark red-brown to black and develops on the stems and capsules as well. The other is much larger, light brown and not ususally on the stems and capsules. From the former type Xanthomonas sesami (Sabet and Dowson) was isolated at the Fac. Agric. Univ. Khartoum which reproduced the disease on field grown sesame in Sudan and on potted plants at Botany School, Cambridge under humid conditions. It differs from Xanthomonas phaseoli and Xanthomonas malvacearum in being confinded to sesame, in its slow action on starch

which the other bacteria hydrolyse, in 5 days, in its ability to liquify Lofflers blood serum, in its moderate growth on potato plugs compared with the luxuriant growth of other 2 spp. and in some other minor characters. The sesame bacterium produces acid from mannitol which is not utilized by Xanthomonas malvacearum.

516. SHUKLA, B.N., J.N. CHAND, and S.n. KULKARNI. 1972.Changes in sugar content of Sesamum leaves infected with Xanthomonas sesami (on sesame). Indian Phytopath. 25(1):150-151.

* In diseased leaves all the sugars were markedly reduced, maximum reduction was in glucose indicating that the organism utilizes all types of sugars and prefers glucose.

517. SHUKLA, B.N J.N. CHAND and S.N.KULKARNI. 1976. Effect of leaf age on the bacterial blight of sesamum. Indian Phytopath 28(2): 304-305.

* Younger leaves of sesame, which are more susceptible to Xanthomonas sesami, had more stomata and a higher N and moisture content than did older ones.

518. SINGH, R.N. 1969. Two strains of Xanthomonas sesami causing two different types of infection in sesame. PANS. 15(3):368-369.

* A first report of Xanthomonas sesami (map 398) from Uttar Pradesh. The Fyzabad strain caused a higher incidence and was more pathogenic than the Kanpur strain. The disease has already been reported from Delhi, Madhya Pradesh and Rajasthan.

519. SINGH, R.N. 1969. Effect of antibiotics against Xanthomonas sesami. (Sabet and Dowson) and Pseudomonas sesami (Malkoff) in vitro. Indian J. Microbiol. 9(4):123-124.

* Of 3 antibiotics tested against Xanthomonas sesami and Pseudomonas sesami on sesame, streptocyline at 400 ppm proved the most effective.

520. SINGH, R.N. 1969. Control of bacterial diseases of sesame (Sesamum orientale L.) by streptocycline. Telhan Patrika. 1(2): 1-2.

* In field trials against Xanthomonas sesami and Pseudomonas sesami streptocycline at 0 3/2.5 gel sprayed on 25 days old seedlings followed by 3 more applications at intervals of 15 dyas kept the crop free from the diseases.

521. SINGH, R.N. 1970. Integrated control of bacterial diseases of sesamum in India. Indian Phytopath. 23:155.

* Both the bacterial leaf spot (Pseudomonas sesami) and leaf blight (Xanthomonas sesami) pathogens of sesamum failed to survive in debris for more than 45 days in sterilized soil and 7 days in unsterilized soil. The pathogens in the seed were eradicated by treating seed in hot water at 52°C for 10 minutes or by soaking the seeds in a mixed solution of agrimycin-100 (0.025%) and wet ceresan (0.05%) at room temperature for 9 hr. Secondary infection in the field was prevented by spraying streptocycline (0.3 gm in 2.5 gallons of water) as a prophylatic measure on 25 days old seedling followed by 3 more applications at an interval of 15 days.

522. URDENETA, U.R. and B.MAZZANI 1976. Effectiveness of different chemicals for the control of bacteriosis of sesame (Sesamum indicum L.) in Venezuela. Agronomica Trop. 26(1):47-54.

* In field trials against Xanthomonas sesami using 5 fungicide sprays were begun 44 days after germination. Cupravit 50 at 0.5% and difolatan 80 at 0.16% were best, reducing incidence by 19.2 and 16.8% and increasing yield by 117 and 67.4% respectively as compared with the control.

523. VASUDEVA, R.S. 1963. Report of the Division of Mycology and Plant Pathology. Scient. Rep. Agric. Res. Inst., New Delhi, 1961:87-100.

* Xanthomonas sesami on sesame is a new record for India.

524. WONDIMAGEGNE, E., A.P. KOROBKO., M.A. CHUMAEVSKAYA and C. DILBO. 1986. Bacterial leaf spot and stem maceration of sesame (Sesamum indicum L.) in some areas of Ethiopia. Sesame and Safflower Newsletter 2:-11-14.

* Bacterial leaf spot caused by Xanthomonas sesami and Pseudomonas sp. and stem maceration caused by Erwinia sp. were most damaging diseases of sesame in Ethiopia.

525. YOUNG, J.M., D.W. DYE, J.F BRADBURY, C.G. PANAGOPOULOS and C.F. ROBBS. 1978. A proposed nomenclature and classification for plant pathogenic bacteria. N.Z.J. Agric. Res. 21:153-177.

* The valid species of bacterial pathogens on sesamum are listed as Pseudomonas syringae pv. sesami (Malkoff, 1906) Comb. Nov, syn P. sesami (Malkoff, 1906) and Xanthomonas campestris pv. sesami (Sabet and Dowson 1960) Comb. nov syn. X. sesami (Sabet and Dowson 1960).

G. VIRAL DISEASES

Leafcurl

526. DEIGHTON, F.C. 1938. Mycological work. Rep.

Dep. Agric. Sierra Leone: 45-47

* Tobacco leaf curl was observed in three localities and is probably widespread as leaf enations were noted on numerous wild plants particularly stachytarpheta. At Najala, Malayan varieties of beni (Sesamum sp.) and Okra (Hibiscus esculentus) shoed similar sympotoms.

527. DEIGHTON, F.C. 1932. Mycological work. Ann. Rept. Agric Dept. Sierra Leone for the year 1931:20-25.

* Sesamum in Sierra Leone is commonly attacked by chlorosis, the plants apparently becoming affected after passing the seedling stage. Slightly affected leaves are mottled the part along the veins being yellow, while the leaves on severely diseased shoots are yellow, and are often curled and dwarfed with turned up edges. Badly chlorosed leaves bear enations, frequently seen as minutes foliar structures on the lower surface generally over the net veins but often over the primary branch veins or mid-rib. Diseased plants are stunted and do not flower. The disease appears belong to virus group.

528. DEIGHTON, F.C. 1940. Tobacco leaf curl in Sierra Leone. Pap. Third. W. Afr. Agric.Conf 1938:7-8.

* Leaf curl of tobacco appears to be widespread in Sierra Leone where alternative hosts of virus include sesame.

529. JANI, S.M. and R.K. BHARODA. 1978 Varietal susceptibility of sesamum (Sesamum indicum L.) to leaf curl disease. Gujrat Agric. Univ. Res. J. 4(i):28-29.

* In field trials with 10 cvs. during 1976-78, the sesame cvs. Patan-64, B-90 and M.T. 67-52 were tolerant to sesame leaf curl virus while T-4 was the most susceptible.

530. PRASAD, B., O.P.VERMA and L.N. DAFTARI. 1985. Effect of leaf curl disease on seed and oil quality of sesame (Sesamum indicum L). Curr. Sci. India. 54(6):388-389.

* Tobacco leaf curl virus infection greatly reduced plant yield and oil content of seeds but the protein content was increased.

531. PRASAD, B., O.P. VERMA and L.N. DAFTARI. 1985. Effect of leaf curl virus infection on metabolism of sesame leaves. Indian Phytopath. 38(2):343-344.

* Chlorophyll and protein content of the infected leaves were increased whereas ascorbic acid content was decreased in all the five varieties. Sodium and potassium contents were increased where as calcium decreased in all varieties.

532. RHEENEN, H.A.V. 1973. Major problems of growing sesame (Sesamum indicum L.) in Nigeria. Mededelingen Landboywhogeschool (Netherlands). 73(12): 1-30.

* Changes in light intesity, disease incidence and possibly temperature during the season influence the relation between sowing date and crop growth. The leaf-curl virus is transmitted by white flies. Delays of sowing after the onset of the rainy season first result in increased infection, but sowing after August 15th gives healthy crops.

533. SINGH, B.P 1963. Strains of sesamum resistant to leaf curl virus. Indian Oilseeds J. (4):339-340.

* The characteristics are presented of 5 sesame vars. found to be resistant to tobacco leaf curl virus following and accidental contamination of 121 vars. On the Durgapura experimental farm from sesamum seeds introduced from the Sudan. One of the resistant vars. was also drought resistant.

534. STOREY, H.H. 1933. Report of the Plant Pathologist. Fifth Ann. Rept EAst. African Agric. Res. Stat. Amani: 13-17.

* The green flower (leaf curl) disease of sim-sim (Sesamum indicum) important in Uganda and Tanganyika is also suspected to be due to a virus.

535. WALLACE, G.B. 1934. Report of the Mycologist, 1933. Ann. Rept. Dept. Agric, Tanganyika Territory, 1933: 76-78.

* leaf curl of sesame was less severe at Morogoro than in 1932 and was present also on Mafia Island. The affected leaves borne enations similar to those seen in tobacco leaf curl which may indicate that the diseases are related.

Mosaic

536. ANONYMOUS 1967. Plant Virology. Procceddings of the 6th Conference of the Czechoslavak plant Virologists, Olomic, 1967, 346pp. Academic Publishing HOuse of The Czechoslovak Academy of Sciences. Prague: 1969.

* F. Among the new virsus disease outlined by I.Kobachovski (250-252) was sesame mosiac.

537. BRAIKOVA, B. 1980. Sesame, a new differnetial host of potato virus X. Rasteniev dni Navki. 17(3): 96-100.

* Sesame was found to be a host of potato virus X, potato aucuba mosaic virus and alfalfa mosaic virus. After 4 days incubation cvs. susceptible to

PVX reacted with local necrotic spots and rings or spots but not systemically.

538. CHANG, M.U. and C.V. LEE. 1988. A virus disease of sesame (Sesamum indicum L.) caused by watermelon virus(WMV). Korean J. Plant. Prot. 19(4): 193-198.
* Virus isolates from 27 to 32 samples from plants with symptoms of stunting, yellow mosaic, necrotic spots and malformation were identified as WMV. Details are given of host-range and physical and biological properties of the isolates.

539. CHIN,W. 1968. Strains of Cucumber mosaic virus on tobacco in Talwan. A Rep. Tob. Res. Inst. Talwan. 1968:191-197.
* Five isolates of CMV considered to represent 6 strains induced local lesions on sesame.

540. COOPER, W.E. 1949. Top necrosis, a virus disease of Guar. Phytopathology, 39(5): 347-358.
* The virus was transmissible through the sap to sesame.

541. COSTA, A.S. and E.W. KITAJIMA. 1970. Veinal necrosis of Malva caused by a member of the potato virus x group. Bragentia 29:51-55.
* Veinal necrosis of Malva parviflora and other Malva spp. was found associated with particles 15 x 525 mu. Sesame was one of the susceptible hosts.

542. GANGOPDHAY, S. 1967. Leaf mosaic disease of Sesamum orientale in West Bengal. Sci. & Cult., 33(12):537-538.
* A new type of virus disease causing a yellow mosaic and stunted growth of sesame is reported. The disease is sap and graft transmissible.

543. INOUYE, T. 1964. A virus disease of pea caused by Watermelon mosaic virus. Bar. Chara. Inst. Landw. Biol. 12(2):133-143.
* An isolate of the virus, causing a wide spread disease of peas in West Japan was also pathogenic to sesame.

544. KISHI, T. and S. TANAKA. 1964. Studies on the indicator plants for citrus viruses. II. Mechanical transmission of the virus causing satsuma dwarf to sesame (Sesamum indicum L.) Ann. Phytopath.Soc. Japan. 29(3): 142-148.
* Of 27 spp. non-legumes (of 12 families) inoculated with satsuma (citrus) dwarf virus only sesam proved susceptible (white sesame most, brown less and black only systematically without local lesions) and the virus was transmissible from this to black eye cowpea and a var. of kidney bean (Phaseolus vulgaris). Sesame was not however susceptible to (citrus) tristeza and vein enation viruses, both common on Satsuma orange. Young sesame plants were rather better than old as indicators for Satsuma dwarf. such plants exposed to > 34°C immediately after inoculation generally developed to symptoms or sometimes systematic infection 10 days later but if kept 8 hrs. at 25° they showed marked symptoms even if exposed later to > 36° C.

545. ROECHAN, M., M. IWAKI, S. NASIR, D.M. TANTERA AND H.HIBINO. 1978. Virus diseases of legume plants in Indonesia. 4. peanut mottle virus. Contributions of the Central Research Institute for Agriculture. No. 46:11.
* Sesame was susceptible to groundnut mottle virus when inoculated mechanically.

546. THOUEVNEL, J.C., A. MONSARRAT and C.FAUQUET. 1982. Isolation of cowpea mild mottle virus from diseased soybeans in the Ivory Coast. Plant Disease. 66(4):336-337.
* The virus was isolated from soybeans showing severe mosaic to which sesame plants were also susceptible.

H. MYCOPLASMA DISEASE

Phyllody

547. ABRAHAM, E.V., K. NATARAJAN and S.JAYARAJ. 1977. Investigations on the insecticidal control of the phyllody. Madras Agric. J. 64(6):379-383.
* Five sprays of sevithion (carbaryl 40%, parathion methyl 10%) at 1.5 kg/ha or of monocrotophos 0.025% were found to be significantly superior to sprays of dimethoate 0.05%, methyl demeton (demephion) 0.025%, fenthion 0.1% and endosulfan 0.07% for the control of sesame phyllody vector. With sevithion, however, a heavy build-up of aphids (Aphis gossypii) took place, causing substantial loss of yield, sevithion, monocrotophos and endosulfan also controlled the shoot webber-cum-capsule borer. With monocrotophos significantly higher yields were obtained.

548. ANONYMOUS 1949. Progress reports from experiment stations, 1947-48. Empire cotton growing Corporation, London, 137 pp.
* In Sudan, Red variety of sesamum was severely affected with phyllody which eventually swept through the crop giving almost 100 per cent infection.

549. ANONYMOUS. 1962. Indian Agricultural Research

Institute, New Delhi. Agric. Res., New Delhi. 2(3):147-159.

* Sesame phyllody virus was transmitted to groundnut by the Jassid Orosius sp.

550. ANONYMOUS. 1964. Indian Agricultural Research Institute, New Delhi. Central Rice Research Institute, Cuttack, Jute Agricultural Research Institute, Barrackpore , Central Coconut Research Station, Kayangulam. Agric. Res. New Delhi. 4(2):81-90; 96-99., 108-116; 125-126.

* A sesamum phyllody virus was successfully transmitted to Lupinus albus and Amaranthus edulis, its latent period in the vector being extended to 60 days in winter as compared with 11-13 days in summer.

551. BINDRA, O.S. and D.R.C. BAKHETIA. 1967. A note on the natural incidence of Sesamum phyllody virus in Brassica spp. at Ludhiana. P.A.U.J.Res. Ludhiana. (4): 406-408.

* The virus has been observed to infect sunn hemp (Crotolaria spp) and various Brassica spp. at Ludhiana. N and P fertilizer applications had no effect on disease incidence which was much higher in Brassica campestris var. toria than in var. sarson.

552. CHOOPANYA, D. 1972. Mycoplasma like bodies associated with sesame phyllody in Thailand. Thai, J. Agric. Sci. 5(2):127-133.

* Mycoplasma like bodies were seen by the electron microscope for the first time in diseased sesame tissue but not in healthy tissue. In the field 2 of 14 cvs. showed no symptoms. No phyllody was observed on plants grown from normal seed or phyllody infected plants.

553. CHOOPANYA, D. 1973. Mycoplasma like bodies associated with sesame phyllody in Thailand. Phytopathology, 63(12): 1536-1537.

* The presence of mycoplasma like particles in phyllody affected sesame plants suggested that these are the cause of the disease and not the virus as previously reported.

554. COUSIN, M.T., K.K. KARTHA and R.DELATTRE. 1970. On the presence of mycoplasma like organisms in the sieve tubes of sesame affected by phyllody. Cotton Fibr. Trop. 25(4):525-526.

* The ultra structure of mycoplasmas found in affected plants from the Upper Voltas between phyllody and cotton virescence are discussed.

555. DEIGHTON, F.C. 1932. Mycological work. Ann. Rept. Dept. Agric. Sierra leone, 1931-32.

* Sesamum phyllody is also known to occur in Uganda, Tanganyika, Sierra leone.

556. DESMIDTS, M. and J. LABOUCHEIX. 1974. Relationships between cotton phyllody and a smilar disease of sesame. FAO Plant Prot. Bull. 22(1): 19-20.

* The disease was transmitted by Orosius cellulosus from sesame plants with phyllody symptoms (RPP. 50, 2471) to cotton. The symptoms produced were identical with those obtained in transmission tests from diseased to healthy cotton. Sesame may play an indirect role in the disease cycle as an alternate host for the vector, but is unlikely to be a direct natural source of inoculum for cotton.

557. DEY, P.K. 1948. Plant Pathology. Adm. Rept. Agric. Dept. U.P., 1945-1946:43-46.

* Phyllody and Alternaria sesamicola were recorded for the first time on til (sesame).

558. KASHI RAM. 1930. Studies on Indian Oilseeds. 4. The types of Sesamum indicum. DC. Mem. Dept. Agric. India. Bot. Ser. 18:144-148.

* Sesamum phyllody was reported as sepaloidy.

559. KAUSHIK, C.D., P.P. GUPTA and G.S. SAHARAN. 1986. Multiple disease resistance sources in sesamum (Sesamum indicum L.). Sesame & Safflower Newsletter. 2:18-22.

* Out of 175 genotypes tested over three years, cvs. Phule Til No. 1, B-67, HT-12, HT-16, Jabalpur local, RCR-3 and TC-229 were found to possess multiple resistance to Phyllody (MLO), root rot (Macrophomina phaseoli) and leaf curl virus diseases of sesame.

560. KLEIN, M. 1977. Sesame phyllody in Israel. Phytopath.Z. 88(2): 165-171.

* Affected plants usually showed a syndrome similar to that of sesame phyllody as described from India and Upper Volta. Mycoplasma-like organisms were associated with the disease. The relationships between the assumed pathogens of the disease in the three countries are discussed.

561. KONNER, B.S., H.S. SIDHU and O.S. BINDRA. 1978. Effect of sesamum phyllody disease on the longevity and fecundity cum fertility of its leaf hopper vector Orosius albicinctus, Cicadellidae, Homoptera. J. Agric. Sci. 91(2): 509-510.

562. KRISHANSWAMY, V. and R. JAYARAJAN. 1982. Studies on phyllody disease of Gingelly (Sesamum indicum L.). 1. Amelioration of symptoms by antibiotics. Madras Agric. J. 69(5): 321-325.

* Prophylactic sprays with antibiotics of the tetracycline and macrolide groups of benomyl were

inefective against this disease. When applied to diseased plants by wick feeding through the stem, tetracycline hydrochloride and oxytetracycline hydrochloride ameliorated the symptoms by inducing elongation of the internodes. Increase in leaf size and production of flowers which set capsules. These antibiotics were not effective when applied as soil drenches.

563. KRISHNASWAMY, V. and R.JAYARAJAN. 1983. Effect of growth regulators and age of plants at infection on phyllody disease of Gingelly (Sesamum indicum L.). In Proceedings of the National Seminar on the management of diseases of oilseed crops, Tamil Nadu Agric. Univ., Madurai, India. 66-68 pp.

* The effects of gibberllic acid and indole acetic acids and of plant age at symptom appearance on sesame phyllody are described.

564. MATHUR, Y.K. and J.P.VERMA. 1973. Relation between date of sowing and incidence of sesamum phyllody and abundance of its Cicadellioi vector. Indian J.Entomol. 34(1):74-75.

* Maximum disease intensity was on sesame crops sown in early (28.60%) and mid-July (29.93%), the minimum (16.94%) on a crop sown in early August. Population of the vector Orosius albicinctus decreased with delay in sowing date.

565. MAZZANI, B. and G. MALAGUTI. 1952. Phyllody in lochnera and sesamum. Agron. Trop., Maracy. 2(1):59-63.

* Since 1949 phyllody has been observed in wild and cultivated plantings of Vinca rosea in Venezuela in the states of Araguna Carabobo, Barinas Faclon, Anzoategui, Sucre and Monagas and in Maracy on Sesamum indicum, Sesamum radiatum and on the progeny of matrocline diploids obtained by pollinating Sesamum radiatum with Sesamum indicum in India.

566. MCGIBBON, T.D. 1924. Annual Report of the Economic Botanist, Burma, for the year ended 30th June, 1924:5

* Occurrence of phyllody in sesamum was reported.

567. MEHROTRA, R.S. 1980. Plant pathology. Tata Mcgraw-Hill Pub. Comp. ltd. New Delhi. 703-704.

* Sesamum phyllody is described.

568. MOSTAFAVI, M. 1970. Green flowering of Sesamu. Iran .Pl. Path. 5(4):36-37.

* Phyllody in sesame results in all the floral organs except stamens being transformed into green leaf like structures. Internodes become shortened and leaves small and discoloured. Transmission of the disease by Jassids and Deltocephalus sp. has been obtained between sesamum plants but attempts at sap transmission to other test spp. in Iran failed.

569. MUHEET, A. and L.S. CHAUHAN. 1975. Control of phyllody of sesamum (Sesamum orientale L.). Madras Agric. J. 62(4):219-220.

* The incidence of phyllody (RAM 47, 2800) in sesame was reduced significantly by all the insecticides tested, thimet + metasystox being the most effective.

570. MURUGESAN, S., C. RAMAKRISHNAN, T.K. KANDASWAMY and M.MURUGESAN. 1973. Forecasting phyllody disease of sesamum, Madras Agric. J. 60(7): 492-495.

* Incidence of the disease was studied in fortnightly sowing of sesame over one year and in relationship with the vector Orosius albicinictus and weather conditions was established. The mean minimum night temp 30-60 days after sowing was important in forecasting phyllody on the 90th days. A fall of 10C caused a 5-7% increase in incidence.

571. PAL, B.P. and P. NATH. 1935 Phyllody: a possible virus disease of Sesamum. Indian J. Agric. Sci. 5(4): 517-522.

* Sesamum plants at Pusa were affected by a 'Phyllody'. Affected plants bear flowers in which the stamens are transformed into leaf like organs or show a marked tendency to become leafy. The stamens seldom contain fuctional pollen and the plants may be completely sterile. The condition may begin with the first flower, all subsequent flowers then becoming affected, or it may occur later in which case the flowers formed previously are normal, but the tips of the branches and main axis and the new growth from the base are phylloid. Shortening of the upper internodes always occur, so that the abnormal flowers are crowded together, the foliage leaves are dwarfed, and in the floral region they may be pale. Phylloid flowers are radially symmeterical. Glandular hairs are found in parts where they are normally absent, while varieteis which develop normally develop only one flower/axil. The calyx is polysepalous, and the primary veins of the sepals are thick and prominent, the apices of the petals are rounded. A fifth (anterior) stamen is usually developed while the ovary is enlarged, the style is reduced, and the carpellary well transformed into folliaceous structures. The results suggest that the disease is systemic and may be due to a virus. Some evidence was obtained that early sowings develop a large proportion of affected plants than late ones.

572. PRASAD, S.M. and H.S. SAHAMBI 1980. Biochemcial changes brought about by sesamum phyllody. Indian Phytopath. 33(4):617-618.
* The sugars, N and other chemcial constituents of healthy and phyllody-affected sesame plants are tabulated.

573. PRASAD, S.M. and H.S. SAHAMBI. 1982. Sesamum phyllody, some new host records. Indian Phytopath. 35:159.
* The new hosts include Lathyrus odoratus, Pisum sativum, Portulaca Trianthema portulacastrum, Eclipta alba, Lactuca sativa, Lamaea nudiculis, Vernonia cinerea, Peristrophe bicalyculata and Cannabinus sativa.

574. PUROHIT, S.D., K.G. RAMAWAT and H.C. ARYA. 1978. Light microscopic detection of mycoplasma-like organism. (MLO) in Sesamum phyllody. Curr. Sci. 47(22):866-867.
* When old and severely affected stems of sesame plants showing phyllody symptoms were sectioned and stained with Feulgen's procedures the MLO in the phloem elements were detected by light microscopy.

575. PUROHIT, S.D. and H.C. ARYA. 1980. Phyllody: an alarming problem for sesamum growers. Agric. Digest. 4(12):5-7.
* Phyllody of sesamum is described in detail.

576. PUROHT, S.D. and N.S. SHEKAWAT. 1979. Role of some oxidative enyzymes and metabolites in sesamum phyllody. Indian J.Exp.Biology. 17(7):714-716.
* Sesamum phyllody in relation to enzymes and other metabolites was studied.

577. PUROHIT, S.D., N.S. SHEKHAWAT and H.C. ARYA. 1983. Ascorbic acid metabolism in phyllody of sesamum induced by mycoplasma. like organisms. Inst. J. Trop. Pl. Disease. 1(11): 107-110.
* In diseased tissues ascorbic acid content increased and ascorbic acid oxidas was less active than in healthy tissues. Availability of precursor sugars in diseased tissues may enhance ascorbic acid synthesis, these factors leading to proliferation of the tissues.

578. PUROHIT, S.D., N.S. SHEKHAWAT and H.C. ARYA. 1980. Antibiotics in the control of sesamum phyllody. Indian J. Mycol. Pl. Pathol. 10(2): 51(Abst.).
* Out of five antibiotics only tetracycline-HCL abd oxytetra-cycline-HCL at the concentrations of 100, 200 and 300 when sprayed and 500 and 750 ppm when applied to root zones by drenching were effective in controlling the disease.

579. REGUPATHY. A. and S. JAYARAJ. 1973. Physiology of Sesamum phyllody disease and its influence on the infestation of the leaf hopper vector Orosius albicinctus. Dist. Phytopath.Z. 78(1):86-88.
* The leaf hopper preferred diseased sesame plants, which were nutritionally favourable since they had higher moisture, N, Mg and Fe contents and lower carbohydrates and C:N ratio. The markedly low Ca content may allow easier penetration of the stylet and ovipositor.

580. RHIND,D., F.D. ODELL and U.T. SU. 1937. Observations on phyllody of Sesamum in Burma. Indian J. Agric. Sci. 7(6):823-840.
* Investigations carried out in Burma since 1923 into phyllody or green flowering disease of sesame failed to demonstrate. The condition is seed-borne and indicated that if the cause is a virus, early sowing gave a high percentage of affected plants. High susceptibility was associated with white seed coat, unbalanced habit and short life period. Affected plants have a higher mineral metabolism then unaffected. In conclusion, the suggestions is made that phyllody may be due to failure of reproductive phase to progress normally, owing to various environmental factors acting on complex, undetermined genetic groupings, the reproductive tissues returning to the vegetative condition. The possibility that the condition may be due to a virus is not entirely exclused.

581. ROBERTSON, H.F. 1928. Annual Report of the Mycologist, Burma, for the year ended 30th June, 1928. Rangoon, Supdt. Govt. Printing and Stationery, Burma. 10 pp.
* The so called 'pothe' or 'green flowering' disease of sesamum was exceptionally severe in the Sagaing and lower Chinwin Districts where upto 90% of plant were affected. At Tatkon the disease was milder. Almost all the local varieties of sesame are affected. The symptoms become noticeable only at the flowering stage when the floral parts are transformed into green leaf like structures and branching is abnormally abundant. Affected plants seldom fruit. The disease is stated to be the most severe during prolonged drought or when sowing is very early. Several other plants showing similar symptoms have been observed.

582. ROSE, M.F. 1949. Progress Reports from Experiment Stations, session 1947-48, 137 pp. London Empire Cotton Growing Corporation, 1949.

* The Red and White var. of sesame were attacked just before flowering by a disease known locally as Marad el Dam. which eventually swept through the Red giving 100% infection. It had every symptom of a virus disease and was marked by a darkening and thickening of leaf lamina and a reduction in width with convexing along mid-rib, flower buds were replaced by vegetative shoots with sterile green flowers. Infection of Red strain was 100% and seed yield 45 lb, the figures for white being 43.7% and 354 lb respectively. From white strain 98 single plants showing no symptoms were selected.

583. ROY, S.C. 1931. A preliminary note on the occurrence of sepaloidy and sterility in til (Sesamum indicum). Agriculture and livestock in India. 1:282-285.
* Phyllody was reported as sepaloidy and sterility in Sesamum indicum.

584. SAHAMBI, H.S. 1958. Virus diseases of Sesamum and their control. Indian Council of Agricultural Research. Mycological Research Workers's conference, Simla, India, 1958:81-85.
* Occurrence of phyllody in Sesamum has been mentioned.

585. SAHAMBI, H.S. 1970. Studies of sesamum phyllody virus-vector relationship and host-range. In Plant Disease Problems. First Inter. Symp. Plant Path: 340-351.
* Sesamum phyllody multiplies both in the plant and in the insect vector. The virus is perpetuated by the leaf hopper vector from season to season with the help of the large variety of host plants of the virus.

586. SAHAMBI. H.S. and S.M. PRASAD. 1977. Association of Rickettsia like organism with sesamum phyllody disease. Indian Phytopath. 30:154 (Abst).
* Electron microscopy of Ultra-thin sections of (Phyllody affected) leaf of Crotalaria junicea L.which was infected with sesamum phyllody agent through the leaf hopper vector, Orosius albicinctus, (Distant,) showed bodies resembling rickettsias in the phloem cells. These bodies appeared roughly spherical, with a diameter of C. 160-270 mm and most probably represented transverse or some what oblique reactions of elongated form. These bodies contained ribosomses and faint strands of DNA- like material. In addition to having a limiting unit membrane, these bodies were bounded by a second membrane considered analogous to a wall. Each of these membranes measured C. 2.5 mm in thickness and were separated in between by a space of C.30 mm.

587. SINGH, R. and D.D. NARANG. 1982. Insect pests of sesamum and their control. Prog. Farming. 19(1):13.
* Jassids, the green coloured nymphs and the adults suck the leaves and transmit a mycoplasmic disease stunting the inflorescence. Control is possible by spraying at an interval of 2-3 weeks with 750-1000 g DDT 50 WP or with 375-500 ml melathion 50 EC in 375-500l water per ha.

588. SU, M.T. 1933. Report of the Mycologist, Burma, Mandalay, for the year ended upto 31st March, 1933: 12.
* It is stated in connection with the green flowering disease of Sesamum that a similar condition in Justica gendarussa has been found to be transmissible by grafting and is therefore probably due to a virus.

589. SUNDRARAJU, D. and S.JAYARAJ. 1977. The biology and the host range of Orosius albicinctus dist. (Homoptera Cicadellidae), the vector of sesame phyllody disease Madras Agric. J. 64(7):442-446.
* The mean duration of egg stage varied from 6 to 11 days, the total nymphal period 14 - 17 days and longevity of adults from 20 - 67 days in different seasons. The sesame MLO (Mycoplasma-like-organism) did not have any adverse effect on the longevity and fecundity of the vector. The vector bred successfully on 17 species of plants.

590. SUTABUTRA, T. 1978. Plant disease due to mycoplasma- like organisms in Thailand and attempts at chemical therapy. Food and Fertilizer Technology, Book series Center (EFTC). Taipei, Taiwan, 13:78-83.
* Symptoms resembling those caused by mycoplasma-like organisms (MLO's) have been observed on many crops of economic importance including sesame phyllody.

591. TANDON, I.N. and A.K. BANERJEE. 1988. Control of phyllody and leaf curl of Sesamum orientale. Plant Dis. Reptr. 52(5):367-369.
* Weekly sprays of all insecticides tested (except methyl demeton) against sesame phyllody and DDT (WP) + BHC (WP) against leaf curl reduced infection by the viruses and 2 soil applications of phorate granules combined with endrin sprays are recommended. of 26 vars. of sesamum tested. T13-3/2, 65-1/H and 67B-1/2-1 were moderately resistant to both diseases, 50 A/2 - 2/3 and 5917-1/2 to phyllody and Kanpur local and 15/1-1 to leaf curl.

592. TURKMENOGLU, Z. and U. ARI. 1959. A virus

disease-phyllody virus noted on sesame in the Aegean region. Plant Prot. Bull 1(2): 12-17.

* It is reported from the Bornova Agric. Disease control Inst., Turkey, that sesame phyllody virus has been noted sporadically in recent years on local sesame vars. In West Turkey. Foreign vars. imported in 1957-1959 were upto 50% infected but local vars. growing nearly resistant. Other symptoms such as severe distortion, fasciation and leaf crinkle have appeared in the imported vars. and have not been diagnosed with certainty. Destruction of diseased plants is advocated.

593. VASUDEVA, R.S. 1954. Report of the Division of Mycology and Plant Pathology. Sci. Rep. Agric. Res. Inst. New Delhi, 79-89.

* The sesame phyllody virus was more severe in the early crop than in the late. Leaf curl of sesame was transmitted by grafting and B. tabaci.

594. VASUDEVA, R.S. 1955. Overseas news. Common wealth. Phytopath. News. 1(3):41-45.

* He reports from India that a Jassid, Deltocephalus sp. has been shown to be a vector of Sesamum phyllody virus, which also causes phyllody of Brassicas and sunn hemp (Crotolaria juncea). Twenty varieties of Sesamum orientale, as well as Sesamum occidental Sesame indicum and Sesamum radiatum proved susceptibel.

595. VASUDEVA, R.S. 1960. Reports of the Division of Mycology and Plant Pathology. Rep. Agric. Res. Inst. New Delhi; 85-104.

* In the plant viruses section cross inoculation tests are reported to have shown that phyllody in sesame and Crotolaria juncea are caused by the same virus. In the Institute, Farm incidence in sesamum vars. was 4.5 - 15.8% and 25% in Sesamum alatum.

596. VASUDEVA. R.S. 1963. Report of the Division of Mycology and Plant Pathology. Sci. Rep. agric. Res. Inst., New Delhi, 1959-60: 91-102.

* All 14 sesame vars. tested by grafting or viruliferous Jassids (Deltocephalus sp) were susceptible to sesame phyllody virus.

597. VASUDEVA, R.S. and H.S. SAHAMBI. 1955. Phyllody in Sesamum (Sesamum orientale L.). Indian Phytopath. 8(2): 124-129.

* Results of studies at IARI, New Delhi, on phyllody of sesame showed the causal agent to be a virus transmitted by the Jassid Deltocephalus sp. Various insects were collected from naturally infected plants in the field and refed on sesame, the transmissions being obtained (on 11 out of 13 plants) only with Deltocephalus sp. Symptoms which appeared in 33 - 59 days from first feeding were identical with those on naturally infected plants.

598. Vasudeva, R.S. and H.S. SAHAMBI, 1959. Phyllody diseases transmitted by a species of Deltocephalus. Burmeister. Proc. Fourth Inst. Congr. Crop Prot. Hamburg. 1: 359-360.

* Transmission of sesamum phyllody was mentioned.

599. VASUDEVA, R.S. and H.S SAHAMBI. 1958. Interrelationship and perpetuation of phyllody diseases of some oilseed and other common plants. Indian Central Oilseeds Committee. First conference of oilseed research workers in India, Chandigarh.

* Host range of sesamum phyllody was discussed.

600. VENKATA RAO, A. And S. KRISHNASWAMI. 1983. An approach towards breeding for resistance to phyllody disease in sesamum. National Seminar on breeding crop plants for resistance to pests and diseases. Tamil Nadu Agric. Univ. Coimbatore, India, 25-27 May, 1983. (Abst.).

* Study of some released varieties and of genotypes from the all India Coordianted Reseach Project on Oilseeds and from germplasm maintained at the Tamil Nadu Agricultural Univeristy led to the identification of plants (from Co.1) showing late occurrence and low incidence of phyllody.

601. VERMA, O.P. and L.N. DAFTARI. 1985. Effect of phyllody on plant yield, germination, test weight and oil content of sesame seeds. Indian Bot. Reporter. 4(1):62-63.

* Sesame phyllody reduced plant yield, test weight, germination percentage and oil content of seeds. A transformation of 25% of the productive length into phyllody caused 39.73% reduction in seed yield.

602. VERMA, O.P. and L.N.DAFTARI. 1976 Phyllody disease of sesamum. Intensive Agric. 14(5):24.

* Symptomatology of the disease is described in the article. Phyllody generally appears at flowering stage. Warm weather during flowering stage favours the disease. Jassid, Orosius albicinctus an insect vector is the carrier of the virus. Losses in the Plant yield, germination and oil content in infected plants may be as high as 93.36, 37.77 and 25.92 percent respectively.

603. VIR, S., C.D. KAUSHIK and T.P. YADAVA. 1974. Incidence of root rot, leaf curl and phyllody in sesamum varieties in Haryana. Madras Agric. J.61(1/2):47-48.

* All 18 sesame vars. observed were infected by these diseases. Var. NP-6 was least susceptible to

root rot (Macrophomina phaseoli), Macrophomina phaseolina and leaf curl. Phyllody infection was least in TMV-1 and No. 128.

I. NEMATODE DISEASES

604. FERNANDES, E., E. VIMENET and A. VIERA 1984. Sesame (Sesamum indicum) a crop resistant to Meloidogyne incognita. Ciencia y Tecnica in la Agricultura, Hortalizas, Papa, Granos y Fibres, 3(1):13-21.

* Sesame is resistant to Meloidogyne incognita.

605. TRIVEDI, P.C. and A. BHATNAGAR. 1978. Control of root-knot nematode (Meloidogyne incognita on Capsicum annuum (bush redepedders) by application of oilcakes of peanut, sesame, mustard and garden rocket. Indian Phytopath. 31(1):75-76.

* Sesamum oil cake is useful for the control of root knot nematode.

606. VERMA, A.C., A.K. PATHAK and B.S. YADAV. 1983. Population level studies of pigeon pea cyst Nematode Heterodera cajani on sesame. Indian J. Mycol. Pl. Pathol. 13(1): 101-102.

* The length and fresh weight of plants significantly reduced when inoculated with 16, 32, and 64 cysts or 1000 and 10,000 larvae. Reduction in root weight of plants at higher levels was highly significant. The rate of multiplication of nematode was indirectly proportional to the inoculum density though it multiplied at all densities tried maximum reproduction potential was at the initial level of 10 larvae per plant (70.5) and maximum at 10,000 (0.55) level.

607. YADAV, B.S., M.K. VERMA and S.M. NAIK 1970. A note on the prevalence of Meloidogyne incognita (Kafoid and White, 1919) (Chitwood 1949) in various plants of Rajasthan. Curr Sci. 39:470-471.

* A syrvey in the cultivated fields, orchards and gardens in different parts of Rajasthan for root-knot nematode infestations was started in 1966. Various host plants, locality, and degree of infestation is different. Sesamum (Til) family pedaliacease showed medium infection rates at Alwar and light infection rates at Udaipur. This family is noticed to be less susceptible.

608. YADAV, B.S. and A.C. VERMA. 1971. Cyst forming nematode (Heterodera sp.) attacking Sesamum orientale in India. Curr. Sci. 40:612.

* The association of sesamum with a Heterodera species is new to nematological studies. The cyst infected sesamum plants showed a relative stunted growth, a sparse root system with bunchy appearance and deficient pod-production. The nematode attached to root-system (including rootlets) were found as deeply embeded and when removed from a root portion left a crater-shaped hollow on it. The developed cysts of nematode are brown on average size 576 x 361 u (length: breadth ration being 1.59:1) these ambifenestrate cysts have bullae away from vulva and the subcrystalline layer absent. Egg sac is large having upto 100 eggs inside. The nemaotde larvae are average 418.1 u long with a stylet 23.4 u size and knobs anteriorly pointed. Lateral lines are four clear portion or tail is equal to stylet length. Male adults of spp. are 1.2 mm in length, having 23 u long spear and 28 u long bidentate spicule.

J. MISCELLANEOUS

609. ANONYMOUS. 1934. Vegetable oils as spreaders for Bordeaux mixture. Mysore Coffee. Exper. Stat. Circ. 2.3. 1984.

* When coffee in Mysore was sprayed with Bordeaux mixture to which cheap locally obtainable, vegetable oils made from sesamum was added as spreaders at the rate of 0.5 to 1 %, the protection afforded against leaf disease compared favourably with that given by Bordeaux mixture plus vesin-soda casein, linseed oil or alumor by fish oil soap, Burgundy mixture.

610. AZERI, T. 1973. First report of Statsuma dwarf virus disease on Satsuma mandarines in Turkey. Plant Dis. Reptr. 57(2):149-153.

* Satsuma dwarf virus causes leaf deformation in sesamum.

611. DARWOOD, N.A. 1980. Pathogenicity of Nigrospora aryzae (Berk & Br.). Petch to maize. Agr. Res. Rev. 58(2):1-14.

* Sesamum was one of the hosts infected with N. oryzae causing yellowing and wilting to rice and seed rot to sesame.

612. JOHNSON, H.W., U.M. MEANS AND F.E. CLARK. 1959. Responses of seedlings to extracts of soybean nodules bearing selected strains of Rhizobium japanicum. Nature. Lond., 183:308-309.

* Source material consisted of nodues from chlorotic soybean plants inoculated with chlorosis inducing Rizobium japanicum strain 76 referred to as C and from normal plants inoculated with strain 31 referred to as N. Severe Chlorosis appeared in sesame.

613. KAMALA, T. and R.N. RAO. 1982. Effect of three fungicides on Sesamum indicum L. var. Madhavi. Goebios. 9(5/6):281-283.
* Seed treatment with Zineb, Capitafol and Captan reduced seed germination, seedling growth and yield. Captan was most phytotoxic.

614. KUMAR, K. and J. SINGH 1983. Effect of fungicidal seed treatment, duration and types of container on viability of sesame during storage. Indian J.Mycol. Pl. Pathol. 13(3):354-356.
* Storage of sesame seeds treated with Bavistin in polythene bags and glass bottles was found superior than any other combination of fungicidal seed treatment and storage container, closely followed by Vitavax and Captan treated seeds stored in polythene bags and glass bottles.

615. MARTIN, H. and E.S. SALMON, 1930. Vegetable oils as fungicides. Nature, CXXVI:58.
* Absolute control of powdery mildew hop (Sphaerotheca humuli) was given in expts. at the South-Eastern Agricultural college, Wye, by sesame oil at the rate of 0.5 per cent.

616. NARASIMHAN, M.J. 1934. Report of the work done in the Mycological Section during 1932-33. Admin. Rept. Agric. Dept. Mysore for the year 1932-33:53-56, 1934.
* Good results in the control of mildew (Oidium sp.) of Betle (Piper betle) were obtained by spraying with Bordaeux mixture (1/2 percent) with casein, 1 percent colite sulphur, Emulsions of honge (Pongamia glabra) or castor soap and 0.5 percent Gingelly (Sesamum indicum), Groundnut or (Pongamia glabra) oil and half percent Bordeaux mixture with 1 percent of the same oils.

617. NARASIMHAN, M.J. 1934. Oil Bordeaux mixture against Koleroga of Arecanut. Mysore Agric Calender, 1934: 21-25.
* Areca (Areca catechu) palms in Mysore sprayed experimentally with Bordeaux mixture to which cheap local vegetable oils were added as spreaders remained almost free from Koleroga (Phytophthora arecae) though others in the same garden sprayed with casein-Bordeaux mixture became affected. The mixture was made by adding 1/8 gall Gingerlly (Sesamum indicum), groundnut or Safflower (Carthamus tinctorius) oil to 12½ galls Copper sulphate and slowely pouring the fluid (with oil floating on surface) into an equal volume of milk of lime, stirring vigorously.

618. NASSERY, H. and G. OGATA. 1979. Sensitivity of sesame to various salts (Iron toxicitics). Agronomy J. 71(4):595:597.
* Toxicity of iron to sesame crop is described.

619. PUROHIT, S.D., S. PUROHIT, N.S. SHEKHAWAT and H.C. ARYA. 1980. Some biochemcial changes induced by Curvularia prasadii in Sesamum indicum leaves. Comparative Physilogy & Ecology. 5(4): 238-241.

620. SHARMA, T.R. 1978. Grow sesamum this way. Intensive Agric. 16(5): 14-15.
* Control of important diseases of sesamum is suggested.

621. SIDDARAMAIAH, A.L., U.V. DOLLE., G.K. KULKARNI and R.K. HEGDE. 1981. Effect of fungicides on the viability of sesamum pollens. Curr. Res. 10(5):85-86.
* On tests on sesame with a fungicide Calixin (tridemorph) had the greatest effect reducing viability to 63-25%, follwed by Dithane M-45 (Mancozeb), Daconil (Chlorothalonil) and Bavistin (carbendazim).

622. SIMONESCU, C.I. 1962. Studies in the field of depression of the processes of plant tumour development. C.R. Acad. Sci. URSS. 143:239-241.
* Postitive results from the use of non-toxic inhibitors for blocking the enzyme processes of cancerous cells suggested that crown gall might be inhibited by anti-oxidizing agents. At the Iasi Polytechnic Romania, Nordihydroguaiacic acid hydroquincne, Gallic acid and Ethyl propyl, octyl and Doedcyl gallates as 0.05-0.5% solutions inhibited galls produced in sesame by inoculation with Bacterium (Agrobacterium tumerfaciens). There is considerable lignification of tissue and a corresponding reduction in cellulose content. Gallic acid and Octylgallate (0.2% solutions) had the maximum effect. Lignification being almost the same as in healthy plants.

623. SRINIVASAN, N. 1982. Simple diagnostic technicque for plant diseases of mycoplasmal etiology. Curr. Sci. 51(18): 883-885.
* A technique to diagnose MLO diseases is given.

K. BOOKS/BULLETINS/JOURNALS/CHAPTER ON SESAME DISEASES

624. ABDOU, Y.A. and O.M. MOUSSA. 1982. Mechanism of infection in sesame sclerotial wilt disease caused by Macrophomina phaseoli (Maubl) (Ashby). Research Bul., Ain Shams University, Faculty of Agric., Cairo. 25P.

* Mechanism of M. phaseoli infection in sesame has been described in detail.

625. ASHRI, A.(ed.) 1981. Sesame: Status and Improvement, Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome.

* The contents are divided in to 9 sections having papers by different experts from many countries. Major problems of sesame growing in different regions and countries have been discussed. Section 3 is devoted to major diseases and pests of sesame and sources of resistance. Section 9 has conclusions and recommendation of plant protection working group.

626. ASHRI, A. (ed.). 1981. Sesame in Israel. In Sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981 56.

* In Israel the major diseases are soil-borne- Fusarium and Macrophomina. Varieties as Oro, Aceitera and Renner (idid) proved extremely susceptible.

627. ASHRI, A.(ed.). 1985. Sesame and Safflower Newsletter (edited), F.A.O. G.I.F.R.I.O. No. 1:97 pp.

* It contains reports, news, research papers, abstracts and references on sesame diseases.

628. AUCKLAND, A.K. 1981. Breeding objectives and assessment of principal commercial strains of sesame in Tanzania. In sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981 (edited by A. Ashri): 127-128.

* In Tanzania Breeding objectives include resistance to Pseudomonas sesami, Cercospora sesami and Alternaria sp.

629. BEECH, D.F. 1981. Sesame in Australia. In Sesame: Status and Improvement, Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri): 27-29.

* The previous year, sesame did not require quarantine in Australia and several diseases may have been unwittingly introduced with seed of this crop. The diseases recorded are, leaf spots (Alternaria sp., Cercospora sesami, Macrosporium sp.), wilt (Fusarium sp., Verticillium dahliae), powdery mildew (Oidium sp.), damping off (Pythium debaryanum), crown rot (Rhizoctonia sp.), witches broom (Mycoplasma-like organism) and bigbud (Mycoplasma-like organism).

630. BEECH, D.F. 1981. Phyllody- its impact on yield and its possible control measures. In Sesame: Status and Improvement, Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981 (edited by A. Ashri): 73-80.

* Incidence of phyllody in India and Burma is as high as 100 percent and 90 percent respectively. Phyllody in sesame has been shown to be associated with the presence in the phloem of a mycoplasma-like organism (MLO) which is transmitted in India and Australia by leaf hoppers (Orosius). The sesame MLO can be transmitted to a range of other crops. In multiple-cropping situations the incidence is often high. For the control of phyllody use of crop hygien, insecticides, varietal resistance to both the MLO and the jassid and cultural practices are suggested.

631. BEECH, D.F. 1981. Sesame - An agronomic approach to yield improvement. In sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri): 121-126.

* There are also several serious diseases, the most important are bacterial leaf spot (Pseudomonas sesami), Alternaria leaf spot (Alternaria sesami), phyllody and leaf curl viruses whose vector is a whitefly. Considerable progress has been made with disease resistance, e.g., against Pseudomonas sesami with the cultivar early Russian, against Fusarium with Aceitera and Glauca and possibly other diseases.

632. BILGARAMI, K.S., JAMALUDDIN and M.A. RIZWI. 1979. Fungi of India, Part I and II. Today and Tomorrows Printers and Pub. New Delhi.

* On sesamum 20 fungi species recorded at different places of India are listed.

633. BRAR, G.S. AND K.L., AHUJA. 1980. Sesame (Sesamum indicum) its culture, genetics, breeding and biochemistry, (edited by C.P. Malik), Ann. Rev. Pl. Sci. Kalyani Pub. New Delhi. 1:414 P.

* Information on sesame disease resistance is given.

634. BUTLER, E.J. 1918. Fungi and Diseases in Plants. Thalker Spink & Co., Calcutta (India).

* Bacillus solanacearum, Phytophthora and, Rhizoctonia sp. have been reported on sesamum.

635. BUTLER, E.J. AND G.R. BISBY. 1960. The

of India, Revised by R.S. Vasudeva. The Indian Council of Agricultural Research, New Delhi.

* On sesamum 14 fungal species recorded at different places of India are listed.

636. CAPOOR, S.P. 1967. Important virus diseases of field and garden crops in India and their control. Indian Council of Agricultural Research, Tech. Bull. (Agric.), No. 12:33.

* Occurrence, symptoms, transmission and control of sesamum phyllody is described.

637. CHAND, J.N. AND D. SINGH. 1972. Bacterial blight of sesamum. In Plant Bacteriology. Vol. I. Bacterial diseases of plants in India (edited by P.N. Patel). ICAR, Summer Institute on Plant Bacteriology, 8th May - 7th June 1972. I.A.R.I., New Delhi: 169-172.

* Bacterial blight of sesamum caused by Xanthomonas sesami has been reviewed in terms of its occurence, symptoms, disease cycle and control.

638. CHAND, J.N. and D. SINGH. 1972. Bacterial leaf spot of sesamum. In Plant Bacteriology Vol. I. Bacterial diseases of plants in India (Edited by P.N. Patel). ICAR, Summer Institute on Plant Bacteriology. 8th May - 7th June, 1972. I.A.R.I., New Delhi: 173-177.

* Bacterial leaf spot of sesamum caused by Pseudomonas sesami has been reviewed in terms of its occurrence, symptoms, causal organism, disease cycle, host range, pathogen variability, varietal reaction and control measures with references.

639. CHUPP, C. 1953. A monograph of the fungus genus Cercospora. Ithaca, N.Y. 667 pp.

* Cercospora species on sesamum are characterised.

640. CLINTON, P.K.S. 1961. Field recognition of plant disease in Tanganyika. Dept., Dar-es-Sallam, Tanzania. Bull. No. 8.

* Symptoms of sesamum diseases occurring in Tanzania are described alongwith others.

641. COOK, A.A. 1981. Diseases of tropical and subtropical field, fiber and oil plants. Mac Millan Pub. Co., New York. 285-291.

* On sesamum bacterial leaf spot, Phytophthora stem canker, Alternaria leaf spot, Cercospora leaf spot, Corynespora blight, Cylindrosporium leaf spot, Drechslera (Helminthosporium) blight, Fusarium wilt, charcoal rot, red rot (Thielaviopsis), Verticillium Wilt and phyllody diseases are discussed.

642. DESAI, N.D. and S.N. GOYAL. 1981. Integrating breeding objectives and agricultural practices for Indian conditions. In Sesame Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri): 118-119.

* Breeding for varieties resistant to wilt, phyllody and Macrophomina rot as well as blight Phytophthora and bacteria) and Cercospora leaf spot, is the only solution for economic production. The wild species found in India Sesamum prostratum, S. laciniatum, S. grandiflorum, and ssp. mlabaricum have resistant to phyllody. Some resistant sources are, TC-25, TC-30. TC-45 (Punjab) and UT-43 (Gujarat) for wilt, Sel-R (M.P.), S-1749 (IARI) for phyllody and M-3-1, M-3-2 (Bihar), No. 2-39, No. 66-193 (M.P.), for phytophtora blight.

643. FERNANDEZ-MARTINEZ, J. 1986. Sesame and Safflower Newsletter (edited). The center of Agrarian Research and Development, CIDA, Cordoba, D.G.I.E.A. Junta de Andalucia, Apartado 240, Cordoba, Spain. No. 2: 127pp.

* It contains reports, news, research papers, abstracts, references and all types of information related to sesame and its diseases.

644. HIRATA, K. 1966. Host range and geographical distribution of the powdery mildew. Faculty of Agric. Niigate University, Niigata, Japan. 309 pp.

* The distribution of Erysiphe cichoracearum, E. communis, Leveillula taurica, Sphaerotheca and Oidium sp. on sesamum has been included.

645. KHIDIR, M.O. 1981. Major problems of sesame growing in East Africa and the Near East. In Sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981 (Edited by A. Ashri): 36-43.

* Sesamum is susceptible to Pseudomonas sesami, Xanthomonas sesami, Cercospora sesami, Alternaria spp., powdery mildew, leaf curl and phyllody diseases.

646. KHIDIR, M.O. 1981. Sesame production in the Sudan. In sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri): 45-49.

* In Sudan bacterial leaf blight is the major problem for sesame production.

647. KOLTE, S.J. 1985. Diseases of Annual Edible oilseed crops. Vol. II. Rapeseed-Mustard and Sesamum diseases. CRC Press Inc., Boca Raton, Florida, USA. 83-122.
* Major and minor diseases of sesamum are described in detail with references.

648. KOVACHEVSKI, I. 1969. Some new virus diseases in crops. In: Plant Virology (edited by Blantny, C. Swets and Zietlinger), Amsterdam, The Netherlands. 250-252 P.
* Sesame mosaic disease is described.

649. LEAKEY, C.C.A. 1970. Diseases of sesame. In: Agriculture in Uganda, (ed. Jameson), J.D.O.U.P.
* Major diseases of sesame have been described.

650. MAZZANI, B. 1981. El Cultivo del Agonyjoli en Venezuela. In Sesame: Status and Improvement. Proceedings of expert consultation, Rome, 1981. (edited by A.Ashri): 61-63.
* Occurrence of main diseases on sesame in Venezuela are listed as, Fusarium, Phoma sp., Phytophthora sp., Alternaria, Cercospora, Cylindrosporium, Xanthomonas and Pseudomonas sp.

651. MAZZANI, B., C. NAVA., G. MALAGUTI., D. MONTILLA and U.R. URDANETA. 1981. Major diseases of sesame and sources of resistance in Venezuela. In sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome. 1981. (edited by A. Ashri): 69-70.
* The most important sesame diseases in Venezuela are foliar and soil-borne ones. Common foliar diseases are: Roundish white leaf spot (Cercospora sesame), angular leaf spot (Alternaria sesami), bacterial leaf spots Xanthomonas sesami and Pseudomonas sesami). A plant blight (Corynespora cassiicola) was also described. More dangerous and a permanent threat in the main sesame producing regions in Venezuela are soil-borne pathogens such as Fusarium oxysporum, Phytophthora sp. and Macrophomina phaseoli, Sesamum radiatum plants were resistant to C. sesami, A. sesamicola, Phytophthora sp. and Fusarium wilt. The "Improved Aceitera" cultivar is resistant to Fusarium wilt, Phytophthora stem rot and Macrophomina black stalk diseases.

652. MYINT, U.T. 1981. Sesame in Burma. In Sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri): 22-24.
* Phyllody is controlled by Endrin (75-100 CC/ha) applied 20-25 days after germination. Black stem disease (Pseudomonas spp.) appears in poorly drained, wet soils.

653. NEERGAARD, P. 1979. Seed Pathology, Vol. 1. The Mac Millan Press Ltd., London. 840 PP.
* Seed-borne diseases caused by Alternaria sesami, Cercospora sesami, Corynespora cassiicola, Drenchslera rostra, Drenchslera sesami, Drenchslera sorokiniana, Macrophomina phaseolina, Phytophthora nicotianae var. sesami, Pseudomonas sesami and Xanthomonas sesami are described with losses caused, embryo/seed coat infection and control through seed treatment.

654. PUROHIT, S.D., N.S., SHEKHAWAT., U.KANT. and H.C. ARYA. 1980. In vitro studies of MLO (Mycoplasma-like organism) infected sesamum and Sclerospora graminicola infected pearl millet. Proc. Nat. Symp. Plant Tissue culture. Genetic Manipulation and Somatic Hybridization of Plant Cells. (edited P.S. RAO, etal). Bhabha Atomic Research Centre, Bombay. Feb. 27-29th. 1980.

655. RANGASWAMI, G. 1961. Pythiaceous fungi (a review). I.C.A.R., New Delhi, India. 87 pp.
* Phytophthora parasitica on sesamum is reviewed.

656. RANGASWAMI, G. 1979. Diseases of crop plants in India. Second Edition, Prentice-hall, India, Pvt. Ltd., New Delhi, India. 339-342.
* On sesamum, phyllody and cercospora leaf spot diseases are described. Among the minor diseases of sesamum reported in India are listed as: Alternaria blight (A. sesami), root and stem rot (Macrophomina phaseoli), wilt (Fusarium vasinfectum var sesami), stem rot (Phytophthora parasitica var. sesami), leaf spot (Cercospora sesamicola), anthracnose (Colletotrichum sp.), bacterial leaf spot and blight (Pseudomonas sesami and Xanthomonas sesami), powdery mildew (Leveillula taurica) and leaf curl.

657. RAYCHAUDHURI, S.P. and T.K. NARIANI. 1977. Virus and mycoplasma disease of plants in India. Oxford and IBH, Pub. Co., New Delhi. 102 pp.
* Symptoms, transmission and control of leaf curl disease of sesamum is given. Distribution, symptoms, transmission and control of phyllody is also described.

658. RICHARDSON, M.J. 1979. An annotated list of seed borne diseases. 3rd Edition. Proc. Int. Seed Test. Assoc. 23:1-320.
* Seed-borne diseases of sesamum are listed.

659. SACCARDO, P.A. 1931. Sylloge fungorum. 25:829.
* On sesame Botryobasidium rolfsii (Saccardo) (Venkatarayan), Gloeosporium macrophomoides (Saccardo), Phoma sesamina (Saccardo), and Vermicularia sesamina (Saccardo) are characterised.

660. SATOUR, M.M. 1981. Fungi, bacteria, viruses, mycoplasma, nematodes and insects attacking sesame. In sesame: Status and Improvement. Proceeding of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A.Ashri): 81-83.
* Information on the diseases of sesamum in 12 countries obtained from participants is summerized. There are 13 fungi, 2 bacteria, 1 virus, 1 mycoplasma-like organism (MLO) and ? nematodes on sesame.

661. SERRY, M.S. AND M.M. SATOUR. 1981. Major diseases of sesame and sources of resistance in Egypt. In sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited A.Ashri): 71-72.
* The most prevalent causal organisms are, Rhizoctonia solani, Sclerotium bataticola, (Macrophomina phaseoli), Fusarium oxysporum and Phytophthora parasitica. Seed treatments with vitavex and captan proved to be effective in controlling seedling diseases.

662. SAHARAN, G.S. and J.N. CHAND. 1988. Diseases of oilseed crops (in Hindi). Directorate of Publication, Haryana Agricultural University, Hisar, India. 269 PP.
* Important diseases of sesame has been described in detail along with a list of minor diseases.

663. SHARMA, S.M. 1984. Future prospects of sesamum and niger as oil yielding crops in India. In Souvenir, Directorate of Oilseeds Research, Rajendranagar, Hyderabad, India. 38-46.
* Production and productivity of sesamum can be increased by breeding for resistance against diseases viz., Phyllody, Xanthomonas, Pseudomonas and Macrophomina.

664. SINGH, B.P. B.N. SHUKLA, K.G. NEMA. and A.C. JAIN. 1977. Diseases of oilseed crops. Bull. J.N. Krishi Vishwa Vidyalaya, Jabalpur (M.P.), India. 104 pp.
* On sesamum Cercospora leaf spot, Phytophthora stem canker, root or stem rot (Macrophomina phaseoli, Rhizoctonia solani), Fusarium wilt, bacterial leaf spot (Pseudomonas sesami), bacterial blight (Xanthomonas sesami), Phyllody (MLO), and leaf curl diseases have been described. In addition 39 other pathogens reported on sesamum have been listed.

665. SINGH, R.S., 1968. Plant Diseases. Oxford and IBH Pub. Co., New Delhi, India. 130-131.
* The importance, symptoms, pathogen, disease cycle and control measures of Phytophthora blight of sesamum are described.

666. SINGH, S.A. and P.K.S. GUPTA. 1982. Major diseases of oilseed crops and their control. Plant Protection in West Bental, Bidhan Chandra Krishi Viswavidyalaya, Kalayani, West Bengal, India, 52-58 pp.
* This review includes details of some diseases affecting oilseed crops (sesame) in India, with current control recommendations.

667. SINGH, T. and D. SINGH. 1980. Anatomy of penetration of Macrophomina phaseoli in seeds of sesame. In: Recent Researches in Plant Sciences. (edited by S.S.Bir). 603-606 PP.
* Anatomical studies on the mechanism of penetration by M. phaseolina in sesame seed is described.

668. SURYANARYANA, D. 1978. Seed Pathology. Vikas Pub. House Pvt. Ltd., New Delhi, India: 80-81.
* On sesamum root and stem rot (Macrophomina phaseoli), bacterial blight (Xanthomonas sesami), and bacterial leaf spot (Pseudomonas sesami), are described in terms of symptoms and control.

669. THANGAVELU, S. 1981. Intensification of research on sesame in Tamil Nadu (India). In sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri): 15-16.
* In Tamil Nadu (India), main diseases of sesame are phyllody, root rot (Rhizoctonia bataticola) and powdery mildew (Oidium sp.).

670. VANRHEENEN, H.A. 1981. Breeding objectives and assessment of principal commercial strains of sesame. In sesame: Status and Improvement. Proceedings of expert consultation, Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri): 113-114.
* In Kenya major diseases of sesame are listed as: Cercospora sesami, Cylindrosporium sesami, Pseudomonas sesami, Alternaria sesami, Fusarium oxysporum sesami, Helminthosporium, Macrophomina

phaseoli, phyllody and leaf curl.

671. VASUDEVA, R.S. 1961. Diseases of sesamum. In Sesamum (by A.b. Joshi). Indian Central Oilseeds Committee, Hyderabad, India. 92-109.
* Phyllody, leaf curl, leaf spot (Cercospora Sesami), stem rot (Phytophthora parasitica), Anthracnose (Colletotrichum sp.), wilt (Fusarium vasinfectum var sesami, root and stem rot (Macrophomina phaseoli and Rhizoctonia bataticola), and bacterial leaf spot and blight diseases of sesamum have been listed and described in detail. Minor diseases have been listed along with references.

672. VYAS, S.C., K.V.V. PRASAD, and M.N. KHARE. 1983. Disease of sesamum and niger and their control. Directorate of Research Services, J.N. Krishi Vishwa Vidyalaya, Jabalpur (M.P.), India. 16 pp.
* Important fungal, bacterial, viral and mycoplasma diseases of sesamum have been described along with a check list of 26 diseases with selected references.

673. VYAS, S.C., K.V.V. PRASAD. and M.N. KHARE. 1984. An annotated bibliography of sesamum diseases, 1918-1983. J.N. Krishi Vishwa Vidyalaya, Jabalpur (M.P.), India. 57 pp.
* It contains 282 abstracts of papers on sesamum diseases.

674. WEBER, G.B. 1973. Bacterial and fungal diseases of plants in the tropics. University of Florida Press., Gainesville. 673 pp.
* On sesame leaf spots (Pseudomonas sesami, Xanthomonas sesami, Cylindrosporium sesami, Cercospora sesame, C. sesamicola, Corynespora cassiicola), blights Phytophthora parasitica, Alternaria sesami), Charcoal rot (Macrophomina phaseolina) and stem rot (Helminthosporium sesami) diseases are described in terms of symptoms and etiology. Fourteen other fungi associated with sesame are also listed with references.

675. WEISS, E.A. 1971. Castor, Sesame and Safflower. Leonard hill Books, London. 495-505.
* Fungi, bacterial and viral diseases of sesame are described in terms of importance, symptoms and control measures adopted.

676. WEISS, E.A. 1983. Oil crops. Longman, London and New York. 332-336.
* Fungal, bacterial, viral and mycoplasma diseases of sesame are described with reference to their distribution, economic importance, symptoms and control. Fourteen Common sesame diseases are also listed.

677. Westcott, C. 1971. Plant disease hand book. 3rd Edition, Van Nostrand Beinhold Co., New York. 710 pp.
* On sesame bacterial leaf spot (Pseudomonas sesami), bacterial wilt (Pseudomonas solanacearum), blight (Corynespora cassiicola), leaf spots (Alternaria sesami, Cercospora sesami, Cylindrocladium, Helminthosporium sesami), charcoal rot (Macrophomina phaseoli) and wilt (Verticillium albo-atrum) diseases are listed.

678. WOPINDI, H.A.E. 1981. Sesame growing in Kenya. In Sesame: Status and Improvement. Proceedings of expert consultation Rome, Italy, 8-12 December, 1980. F.A.O. of the United Nations, Rome, 1981. (edited by A. Ashri). 50-53.
* The important diseases of sesame in Kenya are: leaf spot which is serious at Mtwapa during the humid and warm period; both Cercospora and Alternaria spp. have been isolated from the leaves. Wilts caused by Verticillium or Fusarium are suspected but not confirmed.

679. YADAVA, T.P. 1984. Present status and future strategies of oilseed research, In Souvenir, Directorate of Oilseed Research, Rajendranagar, Hyderabad, India. 17-22.
* Important diseases of sesamum listed are: leaf spot (Cercospora sesami, leaf blight (Phytophthora parasitica var sesami), bacterial leaf spot & blight (Pseudomonas sesami and Xanthomonas sesami), and phyllody (Mycoplasma).

680. YADAVA, T.P. AND A.L. BHOLA. 1980. Research achievements, 1970-1977. Oilseeds Section, Dept. Plant Breeding, Haryana Agricultural Univ., Hisar. 49-50 pp.
* Results on germplasm screening against diseases and seed treatment are tabulated. Root rot, phyllody and leaf curl were major diseases.

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